The Iron Ag

A Review of the Hardware and Metal Trades.

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Clemens' New Mechanical Movement vice is, therefore, a true and perfect mechanical unmixed with those of the wood which had political difficulties and physical disasters that people have got fairly to work. They feel that for Transmitting Rotary Motion.

The annexed engraving illustrates a new mechanical movement for transmitting rotary delphia, Pa. This invention is wholly original in its principles of construction and operation, being in fact the discovery and practical application of a very useful new system of mechanirotation. In all the jointed mechanisms for 1872, and has also taken out foreign patents. sel joint" and its various modifications-three radical defects exist, namely, inflexible joint- substitute for heavy bevel gears. ing, a limited deflection of the line of shafting,

and the transmitting by the joints of dissimilar and variable angular velocities from the driving to the driven shafts. These defective features, though partly counter-remedied by uniting two joints in one "double universal joint," have made them impracticable only for limited uses, and almost wholly so on heavy shafting.

In Mr. Clemens' apparatus absolutely the same angular velocity of the driving shaft is transmitted to the driven shaft, with positive exactness and avoidance of back-lash, and the joint makes a self-adjusting, flexible coupler, enabling the connection of the shafts at all desired angles of deflection, from a straight line up to and even beyond a right angle. Compared with bevel gears, especially for heavy work, the superiority of Mr. Clemens' shaft coupler consists in its being noiseless; its having no back-lash; its greater strength, durability and safety, and its complete range of shaft divergence.

The construction and opera tion of the shaft coupler will be understood by reference to the engraving, which shows sections of two shafts, a and b, connected by it at right angles, with their axis lines, cd and ef, intersecting at the point g. On the shafts a and b are fixed, concentrically with their axes, the like cylindrical heads A and i, each of which are dotted transversely, forming like jaws, on which are attached, by bolts l l, journal caps k k. Journal bearings are formed through the jaws at right angles to and concentric with the axis lines of their respective shafts, in which journals are fitted like journal pins n n. The four equal coupler arms op and q r are carried in pairs in the

jaws by their hinge-jointed hubs on the pivot pins n u. The right-angle lines s s and t t lo cate, equidistant from the point g, the respective planes of rotation of the pins n n. The outer ends of the arms are coupled together by two like ball-and-socket joints, each joint being formed by a ball turned up on one arm and fitting a babbeted take-up socket-box formed on its connecting arm.

The four equal lines, uv, uw and xv, xw, in the same plane as the shaft axis lines c d and ef are, respectively, the axial lines of the four arms op and qr. The line v w represents the circle of rotation in which the center points wand wof the balls revolve, the lines y y being their axis of rotation. The weights z z, z z on the arm hubs preserve the balance and uniform momentum of the rotating and vibrating arms. The pivot pins n n are cored out for oil reservoirs, from which oil is supplied through holes plugged with leather both to the journal bearings and to the ball joints, making the apparatus self-lubricating. Motive power being applied to rotate either shaft, the inner ends of the arms will revolve with their respective shafts in the planes s s and t t, while the outer ends of the arms will revolve in their diagonal circle of rotation v w, which compound rotary movements cause the arms to vibrate, both on their pivot pivot being, in each revolution of the shafts,

movement.

The geometrical analysis of this new movemotion in substitution of bevel gears, the in- to that of the other shaft, in various positions board at a low price. vention of Mr. Melville Clemens, now of Phila- of their revolution, is a most complex and

Mr. Clemens has patented his invention in cal transmission of power in angular planes of the United States, Nov. 2d, 1869, and April 23d, transmitting rotary motion between angular His invention is now brought into successful shafts-which are chiefly Dr. Hook's "univer- practical form, and can be recommended to engineers and mill owners as a most desirable

One of his shaft couplers of 100 horse-power to be urged to a certain degree by the people of scriptions were requested from all the people contributes the following interesting item con-

ment, in tracing its transmission of motive Marquis de Batrera, as well as the means of to carry the project into effect was made at a energy from the plane of rotation of one shaft making with it incombustible paper and card-banquet at the Hotel du Louvre, in Paris. Over Bartholdi has completed the model of the

formed the funeral pyre. The process of working this textile has been rediscovered by the 6th of November, 1875, the first real movement serve the recognition which the immediate exto that of the other shaft, in various positions of their revolution, is a most complex and beautiful study, which we have not space to beautiful study, which we have not space to Harbor.

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be John W. Forney were also in attendance. An association named the Union Franco-Ameri-French idea of creeting a statue of the Goddess of Liberty in New York Harbor, and the means for the procuring of subscriptions. It was the Trocadero, a hill overlooking the Champs which have been taken to carry out the design : then decided that France should defray the cost | de Mars. The plau, originated in France, to erect on Bedloe's Island, in the Bay of New York, a granite pedestal. The cost of the statue was colossal statue of the Goddess of Liberty, needs estimated at 300,000 francs (\$60,000), and sub-

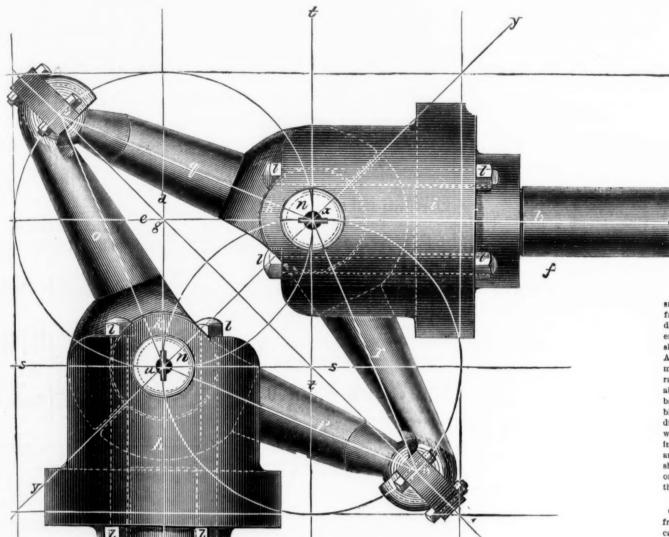
pression of interest here would give them. M. completed in time for the Paris Exhibition of

Currents of Air in Crowds .- A corres pondent of the Journal of the Franklin Institute

> cerning the direction of currents of air in a large crowd of persons out of doors : At the gathering of people on the occasion of the opening of the Centennial Exhibition on the 10th of May, 1876, a striking example and illus-tration was observed of the fact that a crowd lives only by aid of the ascending current from the bodies of the persons composing it. The observer was sitting on the platform in front of Memorial Hall, and all the space between this platform and the Main Building, a space of probably 150 feet in width by 500 feet in length (of dense crowd), was occupied by about 40,000 persons, standing as closely as comfort would allow. The air was quite warm, about 75° Fah., and a light breeze was blowing from the West. There were many smokers in the crowd, and it was noticeable that the course of tobacco

smoke, which showed white against the brown front of the Main Exhibition Building, indicated the course of the current at differ-ent points. A breath of smoke on the outskirts of the crowd was dispersed irregularly. A puff of white smoke anywhere toward the middle of the crowd rose with great apparent rapidity until it was lost to sight by ascending above the line of roof of the building; the background of white clouds, with which the blue sky was then broken, not allowing it to be distinguished higher up. The swiftness with which the smoke rose showed that the ascending current in the center of so thickly thronged and so large a space, was rapid. In fact it showed a set of currents like those at a fireon the outskirts tending toward the center, in the center upward.

Glasgow and the Clyde.—The following is from a little handbook prepared upon the occasion of the meeting of the British Association for the advancement of Science at Giasgow: Many circumstances have contributed to make Glasgow and the Clyde famous all over the world for the position which they have now attained in the application of iron to the wants of mankind. Skill in mechanical construction has become almost an inherited faculty, as eviof which we can refer to at least two, if the United States. If the statue were meant of France. All classes responded quickly and not even three generations of Napiers, Dennys, to be a full gift from the French to the people the needed sum was procured within a few Duncans, Elders, Neilsons, &c., in the indus tries in question. Then, again, the county of is, however, intended as a memorial, jointly scribed even so small a sum as one sou each, Lauark in particular has been abundantly favored by her deposits of coal and ironstone; and by the discoveries of David Mushet, near the greater offerings of the richer classes, for they beginning of the present century, and the great invention of James Beaumont Neilson, nearly half century ago, those mineral deposits became largely taken advantage of. Lastly, much of the success of the district in the science and art of using iron to advantage must be traced cured here. Some months ago a committee to more or less directly to the Clyde itself, inasraise funds, with Hon. John Jay at its head, much as it rapidly became in the hands of the Clyde Navigation Trustees, a great public it has done no work which is known to the water highway, a magnificent channel from whose banks iron-clads of the largest size and now in existence in Philadelphia, but it delays merchant ships of the largest class could safely working until New York, in whose harbor the be launched. No river has attracted more atgrand monument is to be placed, shall step into | tention, been more written about, or has had a the van. In the meantime the design for the larger amount of engineering talent spent upon hight of the figure is to be 115 feet from its rived more beneficial results from engineering durable form of the mutual sentiments of the head, and the pedestal is to be about 80 feet highway to the open sea, and thence to all parts French and American peoples. M. Bartholdi, from base to summit. The estimated cost of of the world, the shipbuilders and marine enwhen he entered the beautiful Bay of New the figure is now 600,000 francs (\$120,000), and gineers were not slow to locate their great in-York was charmed, and while under its poetic the pedestal must, of course, cost much more dustrial establishment upon its banks, and influence conceived the design of a colossal than at first expected. The failure hitherto of eventually the Clyde has become, and is univerpivot movements, the arcs of vibration at each This display of asbestos is in all the stages statue of liberty, which should be a wonder in the people of the United States to enter heartinally acknowledged to be, the great headquarthrough which it passes from the time it is the sunlight, and a guide at night. He returned ly into the spirit of the project, is ascribed by ters of the shipbuilding industry. From its equal to the angle of deflection of the coupled taken out of the earth until it appears as a to Paris and reported to the committees there. M. Bartholdi and the French committee to their various shipyards there is now turned out, shafts. The angular velocities of the two manufactured article. The ancients had a His design was accepted. It was to erect a lack of knowledge of the real purpose of the we believe, as much shipping as is producedshafts are evidently the same at all points of a means of weaving it, and with it made napkins statue of the Goddess of Liberty, 80 feet in monument—that of typifying the unity of two not only at all the other seats of the ship-



can be seen at Section C 9, Machinery Hall, Centennial Exhibition, in connection with the exhibit of Mr. George V. Cresson, manufacturer of shafting. Parties desirous of ordering the coupler for the Middle States and Ohio address George V. Cresson, Philadelphia. For orders and Territorial rights for the Western and Southern States address the inventor, Melville Clemens, care George V. Cresson, Philadelphia,

An interesting exhibition has just been organized at the Simonetti Palace, on the Corso, pins n n and at their ball joints, with equal in Rome, of a fire-resisting silicate of magnesia. revolution of them, when we consider the arms for meals, wicks for lamps, and winding sheets hight, on a pedestal 45 feet high, the figure to nations in devotion to freedom. These gentle- building trade in the United Kingdom comof each opposite pair as equal levers in all for the dead for purposes of cremation, so that serve as a lighthouse. Preparations to realize men have determined to delay soliciting more bined, but likewise in all other parts of the

of this country this would not be the case. It months. Some peasants and artisans suberected by two nations that have many interests in common, of the struggles through much pleasure by the committeemen as the which one passed at its beginning-aided to success by the other, and of the close of a century that has brought prosperity and a likeness in institutions to both. When France established her republic her statesmen and literary men looked to the United States for an exemplar for the erection of the pedestal have been proof free government. They then learned of the approach of our Centennial year, and remembering the part of their country in our Revolution they were moved to take part in our festival. The Marquis Oscar De Lafayette, Marquis de Rochambeau, and MM. Laboulaye, de Tocqueville, and De Remusat first interested themselves in the project, and enlisted the sympathy of President Thiers and others. After some thought it was decided that M. Bartholdi, an statue and pedestal has been changed. The it, and certainly no river in the world has deeminent French sculptor, should visit this country and form some design for the expression in feet to the tips of the serrated coronet on its science. Provided with such an invaluable their positions during a revolution. The de- the ashes of the deceased could be collected this design were retarded for several years by subscriptions from their countrymen until our world.

CLEMENS' NEW MECHANICAL MOVEMENT FOR TRANSMITTING ROTARY MOTION.

and these contributions were taken with as were accepted as thorough proofs of the sympathy of the entire population of France with the project.

Up to the present moment no subscriptions was appointed by the Union League Club; but public. A committee for the same purpose is

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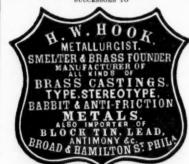
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ished Iron.

We take the following from the Iron and Coal Trades Review

An important discussion upon the utility or otherwise of limestone in connection with puddling various classes of fron, has just come off at a meeting of the Mill and Forge Managers' Association, of South Staffordshire and East Worcestershire; Mr. William Farnworth, the president, in the chair,

Mr. Skidmore, who had himself worked it, was of opinion that with careful handling and a great heat limestone, when puddling certain classes of pig, would improve the quality of the iron. Some few years ago he had met with a statement in one of Percy's works to the effect that in the manufacture of puddled bars limestone was injurious. He was prepared to contradict this, for in the case of a very lean pig he could produce a good fibrous bar when he used limestone. He had experimented with gray limestone from the Wren's Nest (near Dudley), and for a time a pair of squeezers was used to shingle the puddled ball. This machinery, however, was found to be wanting in power the squeezers did not work with sufficient speed, and the old shingling hammer had to be resorted to. The heat of the furnace had to be very hot and quick. Limestone would not do when native pigs were used, for it would cause red-shortness. In the case of lean pig iron, limestone would assist the puddler, because the cinder would then be thicker, and when tapped would set sooner, and by adhering to the plates would save the bottom from burning. It also gave the puddler a sort of flux to help him in his next heat. If all mine pigs were used, the cinder would not have the advantage of sdhering to the plates. The speaker went so far as to say that in his view the use of limestone added to the yield. Even quickline, which he had also worked, did as much, though perhaps did not increase the fiber of the iron. He knew a firm who had used limestone for 25 or 30 years, and he contended that if, as was the case, they still used it, that alone was sufficient proof of its utility. When manufacturing cable chains this firm also used it with profit.

Mr. John Jenks considered the use of lime stone for fettling was antiquated, though in the case of weak iron it might perhaps be used with advantage, but it would require great care. Some thirty years backy when at an iron works in Shropshire, the wire rods turned out were very red-short. This defeet was due to the use of limestone, and it continued so long as limestone was used. On several occasions when the iron was weak and cindery, the speaker himself had used imestone, and the effect was to make coldshort iron more fibrous. Only a short time previously, too, he found that the iron was working rather gray, and as there was at hand but one means of remedying it, he employed limestone. This experiment was attended with some degree of success, for it brought the iron forward sooner by thickening the slaggy cinder. Instead of limestone, a mixture of pottery mine, and oxide of iron and bulldog, might be used as a fettling, and he knew of instances where, in South Staffordshire, physicked cinder was being used as a fettling instead of either

the one or the other.

Mr. Hughes thought that a great deal might be raised in the puddling furnace by employing a blast or something similar. If limestone was used it could not be left to the handling of the workmen; the forge manager would have to deal it out with much care. A certain portion of the limestone (that especially which was gray) might be profitably used with weak iron, but other portions of it were altogether unfit. Often when managers endeavored to help their puddlers they injured themselves. If a man was left to throw into his furnace as much scale as he liked he might turn out a good yield, but they all knew what would be the quality of his

Mr. Barnett and Mr. Edwards both stated that when limestone had been employed the puddled ball often exhibited serious defects when under the hammer.

perhaps be due to the impurities in the and not to the limestone itself NI. doubt a perfectly good flux, the result in great part of a hot furnace, was very important. It would only take up a certain amount of cinder which it itself made from the iron, and assisted the puddler to some extent. The limestone being of a somewhat silicious nature it had nothing but the iron to act upon. If bulldog was charged into the furnace with

the limestone, Mr. Farnworth thought that a large amount of cinder would be got which would flux. He agreed with what Mr. Skidmore had said. The reason why limestone would be beneficial to a weak pig was because it at once came into contact with something of its own nature, and by further fluxing the iron made a richer product. If cinder pigs were used a good yield would be the result, but if lean-mine pigs were used the yield would be inferior. reference to red-shortness, most of them knew that when the silica was extracted from rich ores the iron became red-short. This red-shortness, however, could be mastered by faggoting the iron over again.

Mr. Harris, though he had read many works on the subject, had yet only found one-and that was a Belgian work-written by a civil engineer in 1866, and published in America, which professed to give an explanation of the beneficial action which lime stone, when used as a lining to the puddling this opinion was correct, but it certainly seemed sion.

Limestone in the Manufacture of Fin- to confirm the ideas which the other members had expressed, viz., that limestone was beneficial to lean pigs. He considered that the imestone got rid of the silica.

Mr. John Lester (the hon. sec.) said that ot only had the members of the Associa tion to contend against the silica contained the fettling, but also against the evil which attended the charging of the nace with pigs that arways had round them ore or less sand, which was almost pure silica. This sand they knew adhered to the pigs when they were run out of the blast furace into the sand beds; and in the puddling furnace tended to impart to the iron turned out cold-shortness rather than red-shortness Iron thus produced would be spilly or dry, and would not weld properly. One of the chief causes of red-shortness was the presence of sulphur, and of cold-shortness the presence of hosphorus. Absence of silica would be one

eason of the red-shortness.

The president remarked that red-shortness enerally was no doubt due to the richness of the iron, but in the case of lean pigs, where limestone was employed, it would be the result of a want of cinder in the iron, and to its being so very

The only reason Mr. Rigby could see why ime improved the iron was that it made a more powerful flux. Lime by itself would not melt very readily, but when oxide of iron and silica were added, a good flux was produced. As to imestone increasing the yield he should attrib ute that fact to the better class of pigs used at one time than at another, and not to the limestone itself. The presence of magnesium in some qualities of limestone was a great evil against which they had to contend, and it was to this that he attributed the fact that some limestone was inferior for use in the puddling furnace to other. In the North of England he had worked limestone, but he admitted that the iron produced never had a good welding proprty. It was always red-short. The ends of the rails used to drop off as they were put through the rolls. He questioned the utility of lime-stone. It might do when the product was nail sheets or other qualities of iron that would not require reheating; but for iron that had to be again put in the fire by the blacksmith, it was of little, if any, service. If a large quantity of lime was in the flux it was present, in a more or less degree, in the iron. The lime was not easily reduced to calcium; and what was wanted was something which would prevent the iron from absorbing the oxygen when it was being welded. If limestone benefited iron at all, it was because by bettering the flux it caused a glassy cinder, and by imparting to the iron a fibrous nature increased its strength. The flux should be thoroughly melted; and one firm had, ever since he could remember, used clay of an aluminous nature as a flux. Clay of silicious nature would not do.

Mr. Healey was of opinion that it was not the mmediate action of the limestone upon the iron that gave them an advantage in the using of it, but that combinations which tended to purify the iron were formed more easily when lime was used than when it was not. It would not make a better yield, but the impurities would congregate more readily. It must not, however, be forgotten that an accurate test could only be obtained by very carefully watching the furnace from the time when the charge became moiten until it was reedy to ball. A certain quantity of iron would have to be taken out of the furnace every two or three minutes and examined. His own impression was that the use of time would get rid of the silica, phosphorus, and surphur, which were so objectionable.

A member here said that some iron which had just been worked under his direction was sufficiently liquid when molten to de stroy any fettling. He could not get any fettling to stand it. None of the pigs used were of Staffordshire make; but about a month ago be had experimented with Staffordshire pigs in the same way, but even then be could get no fettling sufficiently refractory. In each case after the first beat he not only had the cinder out, but holes through the bottom of the The president thought that this might furnace. Notwithstanding this, he was so well pleased with the beneficial effect of the lime that he should not give up his experiments till he found a lining that would s and the intense heat. The iron turned out made first-class hoops, strip, small rod, and bars; and this from the worst Staffordshire iron he could find. In three out of four instances the yield was excellent. He could not, however, say that at present it was a commercial success, because in each case a new set of bottom plates would be required.

> Mr. Healey considered that one of the advantages in the using of lime was that as soon as it became free it readily took up with the phosphorus in the pig iron, and the result was a phosphate of lime.

> The president thought that limestone, when sed as a fettling would benefit the iron by not giving off its carbonic acid until it became somewhat oxidized.

Mr. Rigby, however, was of opinion that the earbonic acid would be given off as soon as the lime became red-hot.

The president said that if that was the case. the iron would derive no benefit whatever from

The Association hesitate at present to proounce a definite opinion on the subject. this stage of the investigations which are being conducted, the general view entertained seemed -that limestone is not useful in connection with the puddling of iron, except in special cases, furnace, had upon the iron produced. The and then great care must be exercised. So impublication said: 44 In lining the puddling fur- portant, however, is the subject to the malleanace with limestone the limestone takes the ble iron industry, that it was understood that place of the ferro-oxide, which being set free the experiments would be continued, and, in reacts upon the silicon and exidizes it." The the light of these additional experiments, the speaker was not prepared to say whether or not question be further discussed on a future occa-

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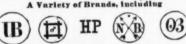
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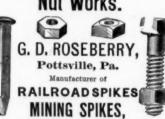
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J. & J. Rogers Iron Co., We take the following abstract of new patents, recently issued, from the official rec-We take the following abstract of new

SHEET METAL ELBOW

To Andrew Syverson, Chicago, Ill.-Aug. 8.-The blank is adapted to form an elbow with one seam, and that in the length of its shortest curve, and with metal of a uniform thickness 1. The blank A of uniform thickness, adapted

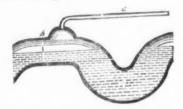


to form the elbow by being constructed substantially as specified.

2. The sheet metal elbow, made of a single blank of sheet iron of uniform thickness, having a single longitudinal seam, the elbow being formed without crimping or cutting, and presenting a smooth surface throughout when Inished.

SEWER GAS TRAP.

To John M. Falk, New York, N. Y .- Aug. 8 .-The two traps have an intermediate escape pipe

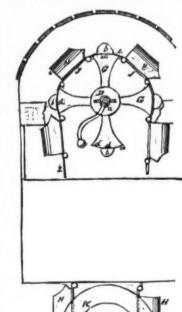


1. A waste pipe, B, provided with two conected traps, A D.

2. The combination, with a waste pipe, B, of an escape pipe, C, for gas, located between traps A and B in said pipe.

WATER ELEVATOR AND PURIFIER.

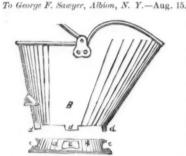
To Thomas T. Bishop, Atlanta, Ga.—Aug. 15.
-The combination of the elevating wheel,



composed of the hub D, with radial shouldered arms G, having rounded tenons b; the endless chain, composed of the alternate slotted plate and solid plates J hinged together; the buckets H, provided with vents x and secured to the solid plates J, and the flanged wheel K. 180,755.-Radiator.-George Curtis and W Thompson, Bridgeport, Conn.-Aug. 8.

180,766 .- Ladle, &c.-Charles P. Housum, Decatur, Ill.-Aug. 8. The handle can be secured at a right or any

atermediate angle by the thumb screw. BOTTOM FOR COAL HOD.



-The combination of the bottom A, apertured e c c, lips d d d and body B.

180,791.-Laundry Furnace,-George W. Robertson, Peekskill, N. Y., assignor to Southard, Robertson & Co., New York city .-Aug. 8.

180,811.—Soldering Iron Heater.—John H. Whit ling, Salem, Ohio.-Aug. 8.

The pipe that connects the reservoir and illuminating burner passes through the furnace. The heat causes the oil to vaporize

180 814 - Wash Stand - William H. Zinn, Bos ton, Mass.-Aug. 8. A wash stand combining a wash bowl and

water from the tank into the bowl. Ohio,-Aug. 8.

180,917.—Combined Stove Pipe Thimble and Register .- Charles Pettit, Erfeville, N. Y ... assignor to himself and L. P. Greenwood, same place.-Aug. 8.

The top and bottom plates are provided with ppenings to allow the air to pass. The bottom aas a register, and the top may be provided with ring to cover the openings.

CASTING DIE PLATES.

part mold a layer or stratum of sand, thereby shank firmly in the tapering bore, the jaws tak-

1. The jaws B B, constructed substantially

as and for the purposes specified.

2. The enlarged chamber Z, in combination

with jaws having projections c and z 3. The threaded socket provided with a rectangular tapering bore, in combination with a chambered sleeve nut, and jaws having projections c and z.

4. The combination of a threaded socket, To Jos. B. McCune, Hamilton, Ontario, Canada.—Aug. 15.—Casts a pattern plate by first casting a bed plate around which to cast the pat-panion jaws working in slots which prevent tern plate. The bed plate is cost in a mold made lateral displacement, said parts co-operating by interposing between the sections of a two to grasp and center the bit, and also fasten the



or in addition to the pattern or pattern cavity. After the bed plate is cast the stratum of sand ing the space made around the bed plate by the emoval of the sand.

The process, herein described, of forming 180,989. attern plates from the pattern itself by first forming a pattern bed and casting metal directly around and in contact with the same

80,946 .- Coal Oil Stove .- Norman H. Sher burne, Chicago, Ill.-Aug. 8.

perforated cap against the the vessel thereon. 80.968.—Faucet.—James O. Waddell, Newark. N. J.-Aug. 8.

Air Furnace,-Reissued.-Orange N. Hart, Winona, Minn., assignor to George T. Flint, same place.—Patent No. 92,822, man, Milan, Ohio.—Aug. 15. dated July 20, 1869.-Aug. 8.

The gas burner or air feeding device can be deflector spreads the smoke in the exit flue, top, the upper portion forming a which is wider than the fire-box.

HAND-SAW.

of a separate piece or pieces of bent metal.

producing a cavity or mold immediately over | ing hold upon the stem of the bit below its

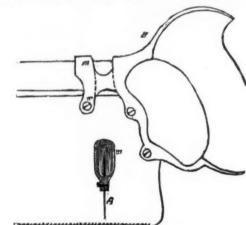
5. In combination with the loose companion s removed and the pattern plate cast, occupy- jaws of a bit holder, a spring applied at their non-grasping ends to automatically open the

> Spring Hinge .- Ira Buckman, Brook lyn, E. D., N. Y .- Aug. 15.

The central plate of a three-part double acting hinge, re-enforced at its edges, and furnished with an unequal number of knuckles on its opposite side, serves, by alternating The steam generated in the reservoir is dis- its position in a series of the attached harged into the chimney of the burner. The hinges, to regulate or adjust the torsion jacket is provided at its base with openings for of the connecting spring, the power of the admission of air, which is heated and the spring being so transmitted from the passes out through openings in the top of the knuckle of the center plate of the middle hinge to the knuckles of the top and bottom leaves of the upper and lower hinge that all the leaves are rigidly held to the center plates by the action of the springs.

The water fire boxes diverge from a point below the grate to a point above, where placed at various distances from the fire. The they converge and join the boiler near the crown." The hot air pipes pass over the top of the boiler to a heating drum at the rear, To Henry Disston and Chas. T. Shoemaker, forming a division in the rear flue, and pipes Philadelphia, Pu.-Aug. 22.-The back and lead the air to a "hollow calorific wall," blade of a back-saw are secured together by a through which it is distributed in the furnace clamp, forming part of the handle, or formed under the boiler. The steam is superheated

and air heated by the waste products of com

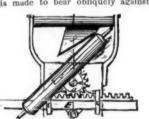


blade A and back B with clamp m, by which the said back and blade are secured together.

2. The combination of the blade, back and handle of a hand-saw with a clamp m forming

part of the handle. BELT SHIFTER.

To A. Crosby, Benton, Me,-Aug. 15 .- By moving the rack bar, the roller attached to the sector is made to bear obliquely against the



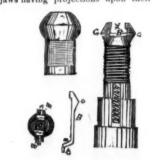
edge of the belt, causing it to run from one pulley to the other.

The combination of the roller C, frame b, sector D. rack E. DEVICE FOR HOLDING BITS AND OTHER TOOLS

-REISSUED. To Miller's Falls Company, Miller's Falls, Mass. assignee, by mesne assignments, of J. Ernest Barber, administrator of Wm. H. Barber, de ceased. Patent No. 42,827, dated May 24,

1864; reissue No. 4736, dated Feb. 6, 1872.-

Aug. 15. Bits and analogous tools can be securely held without any previous fitting to the holder, by means of a socket having a rectangular tapering bore to receive the shank of the bit; a pair of jaws having projections upon their upper



outer surfaces, recesses in their confronting faces, and angular lower ends, terminating in short tangs, and a threaded sleeve nut, having an enlarged internal chamber inclosing the aws.

ported from the hearth plate, the prot passing through the top plate.

The following trade-mark was registered during the week ending Aug. 15.

3931.—Lantern.—Hurricane Patent Lantern Company, New York, N. Y., and Jersey City, N. J.

"the word symbol 'Hurricane'." water tank, with apparatus for pumping the 180,817.—Eaves Trough Hanger.—Jonathan P. short tangs, and a threaded sleeve nut, having Abbott and Henry W. Trissler, Cleveland, an enlarged internal chamber inclosing the

1. In a back-saw, the combination of the | bustion passing over the boiler to the uptake. The bridge wall slopes downward, by which the heat is deflected from the center of the boiler.

181,262 .- Hydraulic Elevator .- Milton P. Hig-

gins, Worcester, Mass.-Aug. 22. The two water services of different heads. in connection with the valve having a cylindrical case with perforated ports, and controlled by an endless cord, with a suitable arrangement. of pulleys, gives a steady and uniform motion to the elevator carriage.

LATCH AND LOCK COMBINED. To W. H. Taylor, Stamford, Conn.-Aug. 15. -1. In combination with the pivotal bolt B, provided with a spring, G, the tail piece D, pivoted to the bolt at a point intermediate be-



tween its fulcrum and its locking end and the

2. In combination with the pivotal bolt B, pivotal tail piece D, and hub C, the sliding bolt E, and tumblers F, for securing the bolt B in the locked position.

The following design was patented during the week ending Aug. 8: 9435 .- Ash Bozes .- Andrew Schmitt, Williams

burg, N. Y.—Term of patent 31/4 years. 181,050.—Chimney Cowl.—J. M. Davies, Enon Valley, Pa.-Aug. 15.

The oblong exit section acts as a vane. 181,145.-Chain Pump.-James S. Corbin, Laurel, Ohio.-Aug. 15.

181,224.—Cooking Slove Attachment.—Theo. R. Timby, Tarrytown, N. Y.—Aug. 15. A portion of the shelf is cut away, so that it shall not cover the pot hole. The shelf is supported from the hearth plate, the pivot passing

Fron.

CLEVELAND.

Cleveland, Brown & Co. MII W A

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For the per cent. of Pure Iron, Sulphur and Phos-		80
phorus in do	13	90
rence	1	50
For those of unusual occurrence or difficult to de- termir., the charge must necessarily depend upon occumstances.		
For de criming the per cent. of Sulphur and Phos- phor. 1 in Iron or Steel		00

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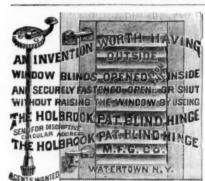
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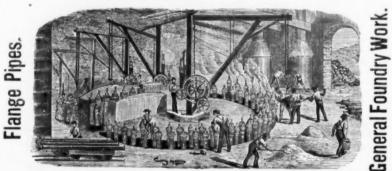
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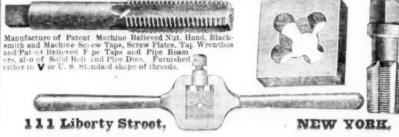
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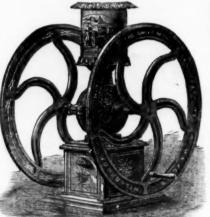
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vor, June 10, 1874.

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Gold Leaf and its Manufacture.

For the dentist is made not only a special inch article, chemically pure, but cunning cesses elaborate the foil after it has reached the ninimum of tenuity, into a soft, spongy mass, which can be deftly punched into the remotest cranny of a tooth. For him little golden cylinders are spun out of flossy webs, that he may counteract the effects of taffy or the neglect of the early tooth brush, and for his use are made little spongy nuggets, that look like solid cubes, but which roll up between the ngers into golden pellets.

Entering a gold beating establishment, the 20 or 30 hammers, weighing from 8 to 18 pounds piece. The men resemble so many blacksmiths rapid and the strokes more measured and regular, and there is more rebound to the hammers Without changing the monotony of the stroke, the gold beater shifts his hammer from one then to the opposite one, and then back again, for he cannot pound steadily in one place-his packet must be kept in motion.

The ingot of gold comes from the mint in hape, perhaps, 5 inches long, 1 inch wide, and olor, for fashions prevail in gilding as in Having received the alloy, it is recast into neariron rollers, being annealed each time it passes through until it has become a ribbon some 7 yards long. When this degree of tenuity is btained, the ribbon, then about an inch and a half in width, is cut into squares, and placed in the "cutch." The cutch is a book 3 inches square, containing leaves made of a peculiar kind of paper, partly animal and partly vegetable, the composition of which is a secret. These cutches are imported from London, where alone the best are made. In the cutch the gold is beaten with a hammer weighing 14 the edge. This generally takes about half an hour. The workman then, with a tool called a wagon which is not unlike a sled with one run ner sharpened, cuts the leaf into four parts. Each of these new squares is then placed in the "shoulder," which is simply a collection of loose leaves, about 4 inches square, made of the intestines of the ox, prepared in a way a vap which is a trade secret. The edges are wrapped web. in vellum, and tightened with a strip of reed, and here the leaf is beaten again with an eight pound hammer for two hours and a half, when it is ready for the "pack," or goldbeater's skin. Goldbeater's skin is made of the cæcum of the ox. It is well cleansed and the mucus surfaces are doubled together and made to firmadhere. The skin is then tunned and t is pressed and dried and cut into leaves five and an eighth inches square. Eight hundred and fifty of these leaves make the book or dred bullocks are used. The skin is semi-transparent before being beaten, and in color is not furious beating, but tears in one's fingers as easily as a sheet of letter paper.

After the pack has been through a hundred and fifty beatings it is sold to the maker of Dutch or bronze metal, who pays about \$20 for it. Between each beating the skin is rubbed with tale, roasted and powdered, which removes greasmess and renders the gold less liable to break. In the process of beating the pack is worked repeatedly in the hands, that is, bent in every direction to equally distribute the heat generated by the hammer and to prevent the gold's adhering to the skin. The acquirement of skill in this molding or bending proess is obtained only after long practice, and it a part of the goldbeater's art. A blunder must destroy the pack and render useless the work already done to the gold. As the metal is beaten out to the edge of the skin it is removed and again cut in four pieces with the wagon. The pieces are replaced in the pack and again hammered to its edge. The process is repeated until the gold is of the required thinness. The hammer used in the final beatings is of about seven pounds weight. It is slightly convex on its face, and the art of the beater is so to work that the center shall at all times be the thinnest part of the leaf; and while he must hammer all parts in such an equal manner that the original square shall grow slowly toward the edges, the thickest part must be always at the outside and

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MER.

Are made of best steel fall among his waste. Here is where practice and the expertness of a light hand doing heavy work tell. Of fifty pennyweights in gold in the ingot seventeen is the return in leaf, the rest being in scrap.

The Euglish method of beating ordinary commercial gold leaf is to agneal an ingot in hot ashes to remove the grease, and then run it between highly polished steel rollers until it is one eight-hundredth of an inch in thickness, an ounce of gold then making a rabon 10 feet E. S. Lee & Co., Due hundred and fifty of them are beaten in fine calf skin vellum to squares of 4 inches.

These are quartered, and the squares again Court on the 22d of June. Taking advantage in the pack, and the squares are then 2400 in the best driver of a portable engine. The first green rays of light. Repeated beatings reduce were carried out in the following way: it to the average thickness of one two hundred thousandth part of an inch. The French was provided. This engine was fitted with a process begins with forging the gold upon anvils, and beating it with small hammers to the thickness of one-sixth of an inch, instead of putting it through the rollers of polished steel. It is then beaten as above described. The average of French commercial gold leaf is one two hundred and eighty thousandth part of an

The leaf after being beaten is given to the charge of girls, who have before them paper books, each 3% inches square, and containing with red ochre, and are made by an old German in Lewis street, who has a monopoly of the business and supplies the trade of the United States. The workwoman opens the pack, and with a pair of wooden pincers, partly like chopsticks and partly like sugar tongs, deftly spreads a leaf on a leathern cushion in front of her, blows it smooth, and, with a larger wagor sitor's attention is first attracted by the din of than the one in use before, and having two sharpened edges instead of one, cuts it into an apiece. The men resemble so many blacksmiths at the anvil, except that their blows are less through a slide into a leathern pocket below, for future collection and smelting. Any holes or breaks are patched dexterously with loose each containing 5 1-10th grains of gold leaf, are packed 20 books to the bundle, and are worth bout \$8 a bundle.

Foil for dentists' use differs from gold leaf in ot being beaten so thin. Gold leaf has alloy not quite so thick. It must first be alloyed for in it to color it, but dentists' foil must be chemically pure. A large establishment must everything else, and leaf varies from almost add to its other departments a refiners' fire and white yellow to a deep golden color. Silver is appointments, where it is made as pure as possi-employed to lighten and copper to darken it. ble. It is then beaten. The deatist, however, requires the foil to be in a spongy state, which ly the same shape it had at the mint, and then the thinning process begins. It is put between tween paper in a press, and then exposing the whole to such a degree of heat that the paper is entirely carbonized, shrinks in surface, and 93 minutes, and consumption of fuel was 6.45 taking the gold with it, gives it a finely corrulibs, per brake horse-power per hour. Now, it gated appearance. Many sheets of this are laid together and cut into shape.

Dutch metal or bronze is not made in this country, but is imported from Germany, and osts about ten cents a book. It is composed of tip, copper and other metals, and is a very good imitation of gold, but it does not stand revolutions obtained was 7943, the running time weather well, is apt to tarnish and peel, and side by side with the real leaf, is easily distinguished. or 15 pounds, until the square of metal reaches It is largely in use for frames for auction pictures and for decorations where gold leaf would

be too expensive.

Gold has been beaten to the thinness of one three-hundred and sixty seven thousand five hundredths of an inch. In Pliny's time an ounce of gold was made into "750 leaves four fingers square." Martial speaks of gold leaf as a vapor, and Lucretius compares it to a spiders'

Prize Engine Running.

We condense the following account of a competitive trial between engine drivers from the Engineer. We have more than once had occasion to call attention, in our columns, to the importance of this subject. The remarks made about the ignorance of English engineers are applicable in a much less degree to those of our own country. It has often been pointed out pack, and in its preparation the execa of five hun- that a little time and money spent in teaching engine men and stokers how to perform their duties would be well laid out. It will, of uulike raw hide or a drum head. It will stand course, be understood that we do not refer here to men already trained, such as the engineers in charge of heavy engines, or the stokers who have charge of the stationary the engine driver "who has kept his engine in boilers used in large manufactories.

But the number of steam engines of small or comparatively small power in use in Great Britain alone is enormous, while the ignorance of the men who have charge of them is extremely dense. The loss incurred by the proprietors of such engines and the employers of such men is much more considerable than will, perhaps, be readily believed. Even nominally the best men would be the better of a little practical instruction, as is proved by the fact that within the last few months the consumption of fuel on the Brighton Railway has been reduced by, we believe, about 3 lbs. per mile, as a result of first pointing out to the firemen of the line the faults usually committed by them in firing, and then taking care that these faults are avoided. Probably the most incom petent engine drivers or firemen in the kingdom are those placed in charge of portable engines, and to the improve-ment of this class we wish to direct at tention. Although it is true that they are generally selected from among the ordinary laborers on a farm, it must by no means be supposed that they are incapable of acquiring instruction. The defects in their practice are the results more of ignorance than of anything else, and fall among his waste. Here is where practice this ignorance must continue to exist until they this ignorance must continue to exist until they are supplied with the means of learning how to do better, while an adequate stimulus is held out to them to induce them to improve them selves. How this is to be done must be left the first open desired according to the nature of the coal distilled, or whether the forms of purifiers are imperfect, it is nevertheless certain that carbonic acid still remains present in illuminating gas, and its presence is decidedly unhealthy. Either a new system for its complete removal or an affactive improvement according to the nature of the coal distilled, or whether the forms of purifiers are imperfect, it is nevertheless certain that carbonic acid still remains present in illuminating and its presence is decidedly unhealthy. to do better, while an adequate stimulus is held

heir annual sheep shearing match at Cheeks | cember 31, 1876.

beaten and quartered. They are beaten again of this meeting, the society offered prizes for number. After the next beating an ounce of prize was £3 and a silver medal, and the gold has been made to cover 100 square feet of second and third prizes consisted each of surface, and at this stage it begins to transmit £2. 10/ and a silver medal. The tests friction brake, such as is used by the Royal Agricultural Society, and a counter. The brake was loaded to 22.5 horse-power. The engine was handed over successively to the different competitors, 21 in number. Each man was supplied with 210 lbs. of coal and 8 lbs. of wood, and as much oil and tallow as he required was weighed out to him, the quantities being carefully noted. He was then left to fire and drive as he pleased, without interference, except to warn him that he was running his engine too 25 leaves. The leaves are rubbed over slightly fast or too slow. The standard of efficiency was the number of revolutions got out of the engine. Without going into details we may say that after five days' work the four best men mpeted a second time, the result being that the first prize was awarded to John Waters, who got 13,967 revolutions out of his engine; the second prize to J. Snashall, with 13,366 revolutions, and the third prize to J. Gardiner, with 13,258 revolutions. Turning to the log sheets we find the following comments by the judges, Messrs. R. J. Sankey and Thos. Aveling. Against Waters we have : "Tubes swept : cylinder lubricated often, and engine oiled; damper closed; reversing lever maintained by pieces, which adhere instantly, and are then transferred to the little paper book. These well broken and wetted; pressure very regular well broken and wetted; pressure very regular band to the other, and turns the little bunch of skin on which it descends first to one side and day's work is 60 books. The books complete, burned." Very nearly similar entries were made by the judges for the two other prize men, from which it appears that they understood what they were about. We may call special attention to the use made of his expansion gear by Waters, who, finding that he could do a little better with the link in one place than in another, compensated for the want of sufficiently minute divisions in the sector of the reversing lever by wedging the latter just where e wanted it.

We may be asked what all this amounts to, and what is proved by the fact that Waters ran off 13,967 revolutions? The actual running time was 91 minutes; the mechanical time was must be borne in mind that none but tolerably good men, men with some reputation as drivers, competed. If we turn to the log of the man who did worst during the trial, we shall see what the difference between good and bad firing and driving comes to. The smallest number of being 59 minutes only; the mechanical time was just under 53 minutes, and the consumption of fuel was consequently over 11.3 lbs. of coal. This is to say, that Gardiner used nearly twice as much coal per horse per hour as Waters. Gardiner's driving seems to have been unsatisfactory throughout. The reversing lever was frequently changed from one notch to another, and the damper was altered several times, the speed of the engine was very irregular. We have thus the plainest possible evidence that the saving which can be effected in fuel by a skulful man is a very important item in the economy of engine power. Waters used in round numbers 1 cwt. of coal less per hour than Gardiner, or in a day of 10 hours, say half a ton of coal, which we can hardly value at less than 7/6. Any farmer who paid Waters 2/6 a day more than he paid Gardiner would thus effect a saving of 5/a day, to say nothing of the fact that the less fuel an engine uses the less will be the wear and tear, and the smaller the bill for repairs.

We are pleased to find that the competitive system is extending throughout Kent. June the Gravesend and Rochester Agricultural Association carried out a very similar series of trials at Oaktey, Higham. Three prizes were given of £10, £6 and £4, with silver medals, to good working order, and is able to produce the greatest amount of steam-power from a given amount of coals." The conditions of the competition were exactly the same as at Sittingbourne. The first prize of £8 was awarded for 10,137 revolutions; the second prize, also £8, was awarded for 10,127 revolutions—practically a tie-and the third prize, £4, was awarded for 10,076 revolutions. In order that the competitors might acquire some practical instruction, the firm who built the engine sent a trained driver of their own to show what could be got out of the engine by proper management. He succeeded in getting 12,743 revolutions out of the engine, thus beating the first prize man by some 25 per cent.

Prize for Purifying Illuminating Gas. -An interesting competition is about to be opened by the German society Verein von Gas and Wasser Fachmannern Deutschlands, which offers a prize of \$400 to the author of the process for the economical purification from carbonic acid of filuminating gas obtained from coal. The systems now commonly employed in volve either hydrate of lime, certain salts, muriate of manganese, for example, and iron ox ides. Whether these methods leave more less to be desired according to the nature of the being in scrap.

The English method of beating ordinary commercial gold leaf is to agneal an ingot in hot ashes to remove the grease, and then run it between highly polished steel rollers until it is one eight-hundredth of an inch in thickness, an ounce of gold then making a readon 10 feet long and 1½ inches wide. It is then annealed agair and cut into squares of 4 inches. One hundred and affty of them are beaten in the comments of the commission, Dr. Schilling, at Munich, prior to Define calf skin valum to squares of 4 inches.

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Pawtucket, R. I.

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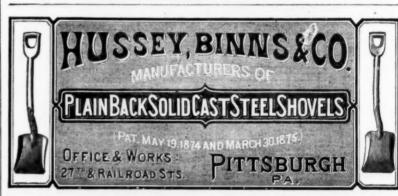
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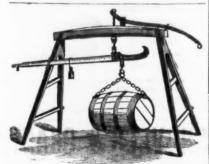
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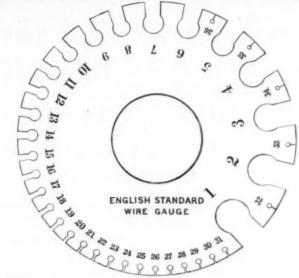
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BUSINESS ITEMS.

MASSACHUSETTS.

Some 75 hands have just been discharged rom the Waltham Watch Factory, and it is feared others must go.

CONNECTICUT.

The strike of the grinders and finishers in the Connecticut Cutlery Shop, at Naugatuck, has assumed considerable importance, and is ng a good deal of feeling between the employers and employes. A few days ago a nan having a minor son who understands inishing and grinding, allowed him to go to vork, and that noon he found a letter in his nat demanding that he take his son out of the thop, under penalty of all kinds of horrible

Frederick Meyers, one of the striking molder, ormerly employed by Sargent & Co., of New Haven, was fined \$15 and costs, amounting to 825.66, for assaulting Hiram Smith, an apprentice at the factory. Judge Blydenburgh spoke a few words to the strikers present, in which he gave them to understand that the next man arrested for a similar offense would be more everely dealt with. Myers took an appeal to the Superior Court. Mr. Sargent has offered a reward of \$3000 for evidence that will convict the 30 persons who have threatened or intimidated workmen employed by him. He threatens to close his entire works unless his men are protected from the strikers. NEW JERSEY

The Andover Iron Company will not blow in

PENNSYLVANIA.

The Sharon Herald claims for Mr. Walker, of the Westerman Furnace, the credit of first using waste gas in drying out a furnace. If he will look over our files he will find that Mr. Benj. Crowther, of the Isabella furnaces, is the one to whom this credit is due.

Keel Ridge Furnace, Sharon, will soon be ready. One of the hot-blast ovens is finished. This will be 14 feet 6 inch boshes; 6 feet 3 inch crucible; and a bell top, 8 tuyeres.

Valley Furnace (Stewart) No. 2, Sharon, blew out Saturday, the 16th, after a blast of about 10 months. It is the intention, we understand, to blow No. 1 in as soon as the stock house is repaired and a new roof put on the casting house.

Westerman Furnace No. 1 blew in on the

20th. The furnace is open top, 7 tuyeres. Spearman Furnace No. 2, Sharpsville, was blown out on Tuesday of last week, after a very successful blast. No. 1, which has been fitted up with a bell-top, was to have blown in last week.

The Blocmsburg furnaces are running to their fullest capacity.

The Berwick Rolling Mill started in full operation last week.

The New Castle Courant says: An effort to make a reduction in the workmen's wages at three furnaces, Thursday morning, viz.: Rosena, Red Jacket and Ætna, resulted in a strike The men were put to work again at the Rosena and Red Jacket, but the Ætna will

Ground has been broken at Marietta for the erection of new hollow-ware buildings upon five lots facing on the Pennsylvania Railroad above the station. The building will be entirely of frame, the dimensions of which are Foundry, 40x70 feet; main building, 50x175 feet. The new corporation will be styled the Marietta Hollow-ware and Enameling Company," and the following officers have been elected: President, James Duffy; treasurer, J. Z. Lindemuth; general manager, E. L. Reinhold; secretary, G. F. Stibgen.

The Ætna Iron Works, New Castle, have been idle for some time to allow of putting in new foundations under rollers, squeezers, and a new fly-wheel pit. Will be in operation in about two weeks.

PITTSBURGH AND VICINITY.

The American Iron Works, on the South Side, are turning out 170 tons of rails for a passenger railway in Milwaukee, Wisconsin.

Evans, Sell & Co., glass lamp chimney man ufacturers, will start up on Monday.

The iron mills of Messrs. Lloyd & Black, on

Second avenue, suspended operations in all departments last week. Want of orders and illness of trade is reported to be the cause of the suspensions. A large number of men are thrown out of work in consequence.

The mills of Zug & Co. are now in full operation, running the bar mill single turn and the pail mill furnaces doub le.

The Union Chain and Cable Company are establishing an enviable reputation for their chain. They have added largely to their machinery, and confidently expect a large trade.

The Pittsburgh Forge and Iron Company are running single.

WEST VIRGINIA. The Riverside Nail Works are again in operation

The Wheeling Intelligencer says : Messrs. Trimble & Hornbrook, the plumbers, are now turning out some of the heaviest gun metal castings ever made in the State. Twelve of the castings are for boxing the journal bearings of the new engine for the Benwood Mill. Four of them weigh 460 pounds each, and eight of them 175 each. This firm are also making other miscellaneous castings for the same engine, which, including the above, will make an aggregate of 3500 pounds for the one

The Belmont and Top Mill nail factories Wheeling, were temporarily shut down last

KENTUCKY

The Kentucky Stock Bell Factory, Louisville, can scarcely keep up with its orders.

The Louisville Plate Glass Factory is run-

line, and a growing demand for their superior

Ward's Furnace, at Cartersville, is still making high percentage ferro-manganese, using about 500 bushels of charcoal to a ton of fren; but then the product is worth from \$120 to \$140 per ton.

The Chattanooga Iron and Steel Company put fire under the boilers and started the mahinery for the first time on the 16th

ALABAMA.

The Eureka Furnace, at Oxmoor, makes about 30 tons of pig iron per day, which find a ready market at remunerative prices. The new furnace, now being built, will have a capacity of 80 tons of iron daily. All the machinery used is of the latest improved kind, and the heat from the coke ovens is utilized to redden the blast ovens and generate steam that propels the machinery, nothing being allowed to go to waste. The company employ 250 persons.

We clip the following from the Ironton Com-nercial of the 16th: "The three furnaces, Alice, Belfont and Ironton, are now in blast the latter, using native ore exclusively, is mak ing an excellent quality of iron. The Iron and Steel Company's Mill is running all their rolls, but orders are slow in coming in. The Law-rence Mill is running steadily. Orders, how ever, are light; customers who formerly purhased 200 tons now send in orders for only 25 and 30 tons at a time. The company are build ing up a good Southern trade, and before the season closes the mill will have manufactured enough ties to bind 50,000 bales of cotton. The Belfont Nail Mill is now running full turn. There is still a large stock of nails on hand, and orders are not as large, or so frequent as they might be. Lambert & Gordon, machinists, founders and boiler makers, are now working about 85 men, finishing up their contracts for Princess Furnace in Boyd county, Ky., and the Dunbar Furnace in Fayette county, Pa. It is umored that efforts are being made to organize a company to build a stove foundry upon the site of the Ironton Foundry, which was burned down in July last."

The Falcon Iron and Nail Company, of Niles, have started a nail keg factory in connection

with their other works.

Mr. Joseph Fletcher, boss roll turner at the Cleveland Rolling Mill Company's Works, Cleveland, is now engaged turning a set of rolls for the purpose of rolling concave bars. with which to manufacture horseshoe nails at the new works, near the plate mill. The full quota, when finished, will consist of one set and two pair, for a regular guide mill train.

The Union Iron Works Company are running both their mills at Newburgh on full time. and full handed. Orders are not what might be vished, and prices are unsatisfactory. Bourne & Knowles, nut and bolt manufac-

curers, are running quite actively, but could do

The Cleveland Rolling Mill Company, at heir wire mill, are turning out about fifty tons of steel wire as compared with thirty tons last year. This embraces every variety of wire, and is shipped to all parts of the country. The company are now employing from 2800 to 3000 uen in the various Newburgh mills. INDIANA.

From a circular received from the newly organized Ohio Falls Car Company, Jeffersonville, we learn that they are now prepared to furnish promptly, and at low prices, all classes of passenger and freight cars, car wheels and car eastings and forgings.

The Aurora Iron and Nail Company start their nail factory this week, beginning with 16 machines, all self-feeders.

MICHIGAN

The old small mill at Wyandotte has been torn down and the new building is nearly framed. The engine is also being removed and will be replaced by one of greater power.

The Morgan Furnace is having a good run at present, averaging about 22 tons per day. There are about 100,000 bushels of coal braze on the bank, and it is being screened for use, which will be a good saving in the way of fuel. The furnace is now using one-fifth braze. About 50 men have been put to work chopping wood and burning coal, and the prospects are that

and burning coal, and the prospects are that
the furnace will run all winter.

L'Anse is somewhat excited over the prospect
of a blast furnace being built in that place.
John R. Case, Esq., formerly manager of the
Champion Furnace, has been looking up the
inducements to be offered for the erection of a
blast furnace.

The following table shows the total shipments of iron ore from the Lake Superior district this season, up to and including Wednesday, Sept. 13, together with the shipments for a corres-

555,769 659,961 Showing an increase of 96,929 gross tons.

The rail mill at Wyandotte was lighted up

The rall mill at Wyandotte was lighted up on the 17th for a two weeks' run on orders received from the Toledo & Maumee and Canads Southern Railways.

The blast furnace of the Eureka Iron Company blew in late Monday night, 18th, and the first cast was made Tuesday evening. The repairs on the furnace have been very thorough, and it is expected to turn out on an average of 20 tons a day. It has just received orders for 250 tons of iron. Fifty tons were for the Detroit Stove Works, and the remainder for Cleveland dealers. and dealers.

The Wyandotte Courier says: The docks have The Wyandotte Courier says: The docks have presented quite a lively appearance for the last week, considering the times. On Tuesday the bark Sunnyside and schooner City of Tawas laid at the Eureka dock with large cargoes of ore, while at the rolling mill docks were the propeller Atlantic, throwing off old rails, and the schooner Fred. L. Wells with 200 tons of coal. ILLINOIS.

For Tin, Japan Ware, 8afe and Carringe Manufacturers, Etc. For Sale by

JULIUS FECHTELER, 104 John St., N. Y.

HORSE AND MULE SHOES.

Ining full time and force, and yet orders are accumulating.

The Belleville Naill has been idle for over nine months, and has been leased by Jas. C. Waugh & Rankin, report increased activity in their & Bro. for a term of years.

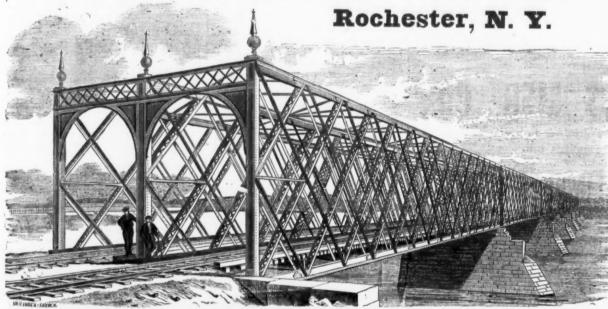
Any Dealer is aware that in an ordinary Hand Saw, the front cut is the effective cut, and drawing back the Saw has little effect, by reason of the slant edge riding over the fiber as the Saw is drawn back. The difference between the front cut of a Hand Saw, and the back cut, is the difference between the Lightning Saw teeth and all others; for all other saws are set one point and ride on slant edges. By setting two points of my M the same side, and the next two the other, I conceal the slant between them, and operate wholly by the outside of a nearly vertical M tooth. Standing nearly vertical the two points of the M occupy the same space as one old \(\) tooth. One point only is cutting and the other follows in the slit behind it to cut in the same manner, in the return motion, thus doubling the cut upon the same base and space of tooth. This construction also gives the breadth and durability of nearly an inch of steel instead of a single slender scraping point, and presents the upright instead of the slant edges to the timber. Any one can in a moment test the principle by comparing the front and back cut of any V tooth Hand Saw. My new Patent of March 28th, 1876, allows the saw-dust perfect clearance; the arch slightly widening to the points of teeth renders it impossible for green or resinous saw-dust to be retained, while the slightly increased breadth at base of tooth gives the durability so much advocated by parties who have round-edged files for sale. Slightly pyramidal, the outer edges are as upright as the front cut of a Hand Saw, and the back slant cut is concealed in no other saw than mine, by setting the two points of M to cut in line instead of alternately. Thus by this new patent I avoid all "overhang or undercut," avoid all tearing, and to the matchless speed of the Lightning dress and set, add the durability, simplicity of sharpening, and sweet cutting so much admired. I thus adapt the Lightning teeth to universal use, in all Hand, Pruning, Buck, and Cross-Cut Saws. The concave in the centre of the M saves files, and renders it impossible to file the tooth out of shape, ** A 10 inch Cant File and Set fitting the M is furnished for forty cents, that will file ten saws easily.

** A 16-inch log was sawed off in 17 seconds by hand with a Lightning Cross-Cut Saw, at Pennsylvania State Fair, on September 30th, 1874, before President Eby; W. B. Lawson, S. S. Hoagland, and other officers of the State Board, timing.

\$1000 challenge to any responsible saw manufacturer, to match the Lightning Saws, in speed of cutting and ease of sharpening. This patent saw tooth has recently Poor Goods are Never imitated. CENTENNIAL SAW.

TRIAL OF THE IMPROVED LIGHTNING SAW .- The EMPEROR,

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HIGHWAY BRIDGES.

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ders Solicited from Civil Engineers

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Bridgeport,



No. 4298, Burgiar Proof Sash Lock, Patented.

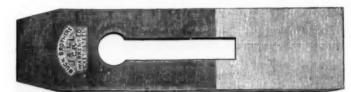
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For marking box's, barrels, bags, and packages for shipment. Printing all manner of showcards, notices, signs, numbers, prices, &c., and other purposes too numerous to mention. Instructive and amusing for boys.

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Size. % in., per doxen...... \$6.00 | 1% in., per dozen..... 6 50 2 " 12 00 7 90 2 2 " 18 18 00 9 00 13 " with lower case. 15 06 An Illustration of sizes sent on application. For sale by Hardware Dealers and Stationers

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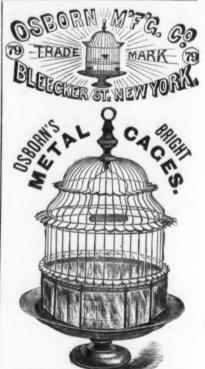
HOC RINGER Only Double Ring over invented. Theonly ring that will keep HOGS from rooting. No sharp points in the



HOWA'S
HOC AND PIC
Ringer and Rings.
Only Single Ring
that closes on the
outside of the nose.
No sharp points in
the nose to keep it
sore. 39

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OSBORN BRIGHT METAL CAGES. Also OSBORN & DRAYTON improvements under weive different patents. We are continually bringing me new and beautiful designs to meet the demands of

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That will not Break.

CORRUGATED STRAPS, (From A to B on both back and front sides) making the weakest the

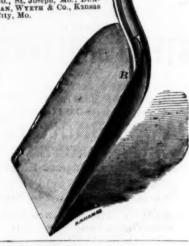
strongest point of the Shovel. Ask for Scoops with "PATENT CORRUGATED

STRAPS." They are now manufac-tured by the following: OLIVER AMES & SONS, North Easton, Mass.; H. M. MYERS & Co. Beaver Falls, Pa.; MAX ROLAND & Co., Philada.; Groom Shovel Co., St. Louis, Mo.

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Speaking Tube, Elbows and Monthpieces. Send for new Trade List.

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FRIEDMANN & LAUTERJUNG,

Pen and Pocket Cutlery, Solid Steel Scissors, Shears, Razors, Russia Leather Strops, Hones, &c. Sole Proprietors of the renowned full concaved patent

"ELECTRIC RAZORS," And the "ELECTRIC SHEARS." Nickel Plated Rows.

Agents for the BENGALL RAZORS. AMERICAN TABLE CUTLERY, BUTCHER KNIVES, &c. 91 Chambers and 73 Reade Sts., N. Y. 423 N. Fifth St., ST. LOUIS, MO.

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PATENT FINE PEN & POCKET CUTLERY

The only Knives made that are put together in such a manner that there is string or frail part of the knife. We warrant our knives equal in cutting qualities and nade, and are acknowledged by English makers as the Best American Knife.

NICKEL & SILVER PLATED POCKET KNIVES which will not rust or become discolored when used as a Fruit Knife, and their cutting qualities are equal to any other knife. Orders filled from the factory, and in New York by Messrs. J. Clark Wilson & Co., No. 81 Beekman Street (who have a full stock of all patterns always on hand), and also by flessrs. G. B. Walbridge & Co., No. 99 Chambers Street.

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Table & Pocket Cutlery, WARRANTED TO BE MADE OF THE BEST

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AMERICAN PEN AND POCKET KNIVES,

MANUFACTURED BY
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New Publications.

THE CITY OF HOLYOKE—ITS WATER POWER AND ITS INDUSTRIES: Published, we believe, by the Hol-yoke Water-power Company; 15 pages, 17x22 incnes. Illustrated.

This pamphlet, as we suppose it must be called, more nearly resembles a newspaper in form and size. The heading is very artistic, and contains a very picturesque view of the city of made its exhibit relief will be forthcoming. Holyoke. On the first page is a fine picture of The works of the company are still running as the dam of the Holyoke Water-power Company, in which the effect of light on the sur- suspend which the people of the whole State face of the river, and the rush of water across and down the apron are admirably rendered. The first two pages are devoted to a history of the town, water-power and dam, cost of power o consumers, railroad facilities, and various other matters of interest connected with the expression regarding it from being made public town. The remaining space is devoted to a two page map of the city, and 61 engravings the starting news that the paper of the instituof works, factories, public buildings and points tion had gone to protest, and that the company of interest in and about the city. This is the finest work of the kind that we have seen, the engravings being uniformly excellent, meriting praise both for their artistic beauty and for good engraving. The printing is all that could the best in the Western market. The depres be desired, and the tinted paper is admirably suited to the work. The product of the various mills, their capacity and their sizes, accompany the illustrations and add to their value. As a publication it reflects credit upon all who have been concerned in getting it up. In looking over the inducements which are presented to manufacturers to settle in Holyoke, we are struck first with the enormous amount of power available, amounting to 30,000 horse-power. This power is sold to mill owners by the 65 forse-power, for which an annual rental is exacted, which, at the present price of silver, amounts to 4.62 cents per horse-power per aunum-an amount so small as to be hardly worth consideration. This, coupled with the easy access to all parts of the country by rail, and the abundant supply of lumber from the upper part of the Connecticut, make Holyoke a most desirable location for a manufacturing

Centennial Notes.

THOS. MILLS & BROTHER.

Philadelphia. A number of very interesting and useful appliances, used in the manufacture of confectionery goods, are displayed by this firm in Machinery Hall. They are not only of special interest to the trade, but by their peculiar and ingenious adaptation to the purposes for which they are used, may be profitably studied by all classes of visitors. A brief description of a portion of these exhibits may not be out of place in these columns, and we will first refer to Mills' patent ice cream freezer. The machine is made in the most substantial manner, the frame being entirely of fron and built upon an iron base, so that there is nothing to warp or twist out of line. The freezing apparatus, consisting of one tub, one copper can and lid, and one dasher or beater, can be removed with the greatest ease from the machine and replaced in less than half a minute. The copper cans are well lined inside, and the tubs are made of the best seasoned cedar, with heavy improved handles. It can be operated either by hand, horse or steam-power, and will freeze 40 quarts in 30 minutes, 25 quarts in 30 minutes, 18 quarts in 15 minutes, 12 quarts in 10 minutes; and it is claimed will freeze smoother, with less ice and salt, and less labor than any other machine now in use. Where the boiler and engine are used the power is applied direct, no belts being required, consequently no parts to become disengaged from the machine and misiaid or lost, while the boiler is complete in all its parts-all ready to be put in position at once. The makers claim that in using this freezer there is a large saving in ice and salt, and that when it is properly operated the quantity of cream produced is much greater than by other machines. The dasher or beater attached to it is so constructed that it removes the frozen cream from the inner surface of the can as rapidly as formed, while the deflection in the center of the beater directs the unfrozen cream to the side of the can, so that the whole body of cream is constantly changing positiou, insuring a rapid conversion into the desired other things connected with the business. It consists of two copper kettles, one inside the other, bolted firmly together, leaving a space between them for the steam. The inside kettle is lined with tin, and is of sufficient capacity to boil 60 quarts of cream in 10 minutes, simply by turning the steam on from the boiler. It is provided with two globe valves, one safety valve and one discharge cock. It would take too much space to permit a detailed account of their exhibits; we may briefly mention, however, the fruit drop machine, which will turn out ail kinds of designs of patterns in candies, varying from 40 to the pound to 1000 to the pound. Another very useful machine is the cocoanut grater, which is guaranteed to granulate perfectly every particle of cocoanut placed in the hopper. No. 1 will grate 60 to 100 nuts per hour, while No. 2 will grate 200 per hour. The almond peeler is tention.

Milwaukee Iron Company.

Company had been protested at the banks, and that the institution is undergoing serious embarrassment. The report of the paper being protested is verified, and the Wisconsin further learns that the company is busy preparing a statement of its financial condition. assets are large, and the business in a fair condition, it is probable that after the company has usual, and it would be a calamity to have them will hope to see prevented.'

The embarrassed condition of the company has long been known to a few of our citizens beside the directors and stockholders, but the prospects of improving business has kept any until yesterday, when the Wisconsin published was obliged to present its creditors with a statement of its exact financial condition.

The stock of the Milwaukee Iron Company ap to two years ago was considered to be an sion of the times, however, brought disaster to the mills, and in the shrinkage of values of one kind and another, and in the effort to keep up a bold front, a great deal of money has been lost-not less, it is announced to-day, than a million and a half of dollars.

The assets of the company are estimated to be nominally about two and a half millions, upon which there is a mortgage of one million, with eight per cent. interest, payable quarterly in advance

These rumors are not flying in the air, but ome from sensible business men, and their truth is not to be greatly doubted. The mangement of the Milwaukee Iron Company is minently capable, and whatever disaster may have befallen it is certainly unavoidable, and solely due to the terrible decline in iron values. It is further stated that a settlement will be effected with the creditors at once, after which there will be a reorganization of the company. The terrible calamity of the suspension of the mills is likely to be prevented judging from present appearances. At this time the works are in progress as usual.

Hotchkiss Revolving Gun.

The following is an account by a Sun correspondent of a trial of the new Hotchkiss revolving gun at Sandy Hook, together with ome notes on a new breech-loading rifle which was tested about the same time. The shell used in the gun is also a new invention of Mr. Hotchkiss:

Preliminary trials of three remarkable military inventions were concluded on Saturday of last week, having been in progress at Sandy Hook since Thursday last. All are the devices of Mr. B. B. Hotchkiss, a well known inventor of rifle projectiles used during the rebellion. The most important of the trio is a revolving cannon. consisting of five steel barrels of 1.5 inch caliber. grouped about a horizontal shaft. The gunner, by turning a crank extending from the stationary breech, causes the shaft and barrels to revolve, and, while this rotation is in progress, mechanism is operated which shoves fixed am-munition into the rear of each barrel, and then, as the loaded barrels continue their revolution, a spring plunger strikes each cartridge in sucession, and each barrel is thus discharged in turn. The projectiles are percussion conical shells, weighing about one pound each, and the rapidity of fire has exceeded 100 shots per minute. As each shell on striking bursts into an average of 17 effective pieces, the above volley is equal to 1700 bullets striking within an area of 260 square feet in the above period of time. The range far exceeds that of any small arm. The revolving cannon, according to the records of previous trials made in France, throws with accuracy over a distance of nearly

The Sandy Hook trials were conducted in the presence of Colonels Crispin, Bayler and Treadwell and Major McKee, of the United States Army Ordnance Board, and are but the precursors of more extended tests in the future. The frozen mass. They also display an improved steam boiling apparatus, for boiling cream, heating water, canning fruits, and various the others beyond at intervals of 125 feet apart —all being in line. Seventy shots were fired, and despite the high wind crossing the range, 206 hits were noted, the shells bursting between the first and second targets.

four miles.

the first and second targets.

The cause of the remarkable accuracy of the gun and its great range is found in the peculiar construction of the projectiles, which consists simply in rounding off the edge of the butt of the shell, so as to avoid the sharp corner in the rear. This modification has been found to augment the range 20 per cent., and greatly to increase the accuracy. The subject has excited interest among army circles.

While the revolving cannon tests were in progress the army officials were experimenting upon a new magazine rifle. This weapon had

progress the army officials were experimenting upon a new magazine rifle. This weapon had never before been tested, and the trials proved that it is capable of being fired at the rate of six shots in six seconds. It is about the size of the ordinary regulation rifle, but discharges the beaviest French cartridges. The curious feature about it, is that while it is a magazine arm, that is, will fire as many shots in succession as there can be cartridges accommodated in the breech receptacle, after the principle of the famous Winchester rifle, it is entirely destitute of any magazine mechanism. A simple spiral will grate 200 per hour. The almond peeler is another interesting article, and is warranted to peel 40 pounds of almonds per hour. We might mention other machines of great utility, and at the same time so peculiar in construction and simple in operation that they are well worth examining by every visitor, but to the trade they are of special interest, and we take pleasure in commending the display to their atsame instant discharges. The opening of a sliding piece on the breech as the gun is brought down from the shoulder then throws out the old shell and enables the new cartridge to enter

ORE SAND
The Milwaukee Evening Wisconsin has the following regarding the affairs of the Milwaukee Evening a report was 276 Pearl Street, N. Y.

The Milwaukee Evening Wisconsin has the following regarding the affairs of the Milwaukee Iron Company: "Last evening a report was 276 Pearl Street, N. Y.

The Milwaukee Evening Wisconsin has the following regarding the affairs of the Milwaukee Iron Company: "Last evening a report was been adopted by the Argentine, Chinese and Brazilian governments.

HARVEY W. PEACE.

JOHN HOGAN.

PEACE & HOGAN.





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Of every description, including Circular, Shingle, Cross-Cut, Mill, Hand, WOOD SAWS. Etc., Etc.

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THE COTTAGE FLY TRAP.

has Won the Prai

The above cut shows the shape and design of the COTTAGE FLY TRAP. It is JAPANNED a dark red color, with bronzed border, the ends neatly lettered and ornamented. It has a neat and attractive appearance, and does not look out of place in the clining room or parior.

The experience of last year warrants us in fully recommending it as THE HERT FLY THAP IN THE MARKET. It surpasses all others in catching files, its capacity for coing so being four to six times queater than the so-called "Cone Traps." It is compact, and its con-truction is so simple that a child can balt and manage it. Its price is low as compared with all others. A trial will convince any one that it has no superior. Put up in boxes of one dozen each.

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Special prices made to large dealers. We solicit your orders.

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Carriage and Tire Bolts,

NORWAY IRON.

From the Best Brands



"STAR" Axle Clip. All Styles of

FANCY HEAD BOLTS.

Blank Bolts, Skein Bolts, Square Head Bolts, Plow Bolts, &c., &c., &c.

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Buy the Best.



Clark's Patent Carriage Bolt.

Best Bolt manufectured for all kinds of agricultural machinery. Will not split the wood, and cannot MANUFACTURED BY

CLARK BROS, & CO., Milldale, Conn. Also Manufacturers of

Plow and Machine Bolts, Coach Screws, Nuts, Washers, Tire Blanks, Rivets, etc.

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HEAVY HARDWARE, WAGON AND CARRIAGE MATERIAL, DRILLS,
ANVILS, BELLOWS, VISES, CHAINS, &c.

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FLORENCE SKATES--1876 Every Skate Warranted Steel and free from any Imperfection.

PRICES: \$1'00, \$2'00, \$3'00, \$3'50, \$6'00

BRONZE SKATE

lamps & Straps

PRICE, WITH STRAPS COMPLETE, \$2.00.

Our SPRING SKATES are by far the easiest to the feet and ankles, and the most elegant in ap

CAUTION.

The trade is cautioned not to buy any Skate made in infringement of our patents, issued to O. Edwards, Aug. 18, 1874—Re-issued May 4, 1875; May 18, 1875; Oct. 5, 1875; Dec. 14, 1875; and May 23, 1876. Also beware of cheap iron imitations of our popular ONE DOLLAR STEEL SKATES.

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Thirty-third Page.—Chicago, Boston, and St. Louis Hardware and Metai Prices.

The Condition of the Blast Furnace Industry of the Country.

We give in another column a table showing in detail the condition of the blast furnaces of the country on September 1st of the present year. The table is very nearly complete, with the exception of the charcoal furnaces of Pennsylvania and Tennessee, and the furnaces of Texas and Utah, returns from which have failed to come to hand at the present writing.

Before commenting on the showing, some explanations are necessary to avoid any misunderstanding. 1st. The divisions of localities are geographical for the most part, and are not made with reference to the points from which furnace supplies are drawn. 2d. The columns "in blast" and "out of blast" only show the stacks from which we have reports, and their footings will not equal the footings of the column of total number. 3d. We have included some furnaces that are rebuilding and not yet completed. 4th. The column of capacity per week is much in excess of what the regular working of the furnaces will showstoppages, slow working and various other causes which will readily occur to

Fuel.		In Bla	st.	Ou	Out of Blast,					
	1874.	1875.	1876.	1874.	1875.	1876.				
Charcoal	143	109	70	63	161	152				
Authracite.	122	86	70	65	121	155				
Bituminous	88	89	76	98	107	138				

PERCENTAGES OF ENTIRE NUMBER REPORTING IN AND

	OULO	E BUR	C A			
1	n Blas	t.	f	Ou	t of Bl	ast.
1874.	1875.	1876		187	1775.	1876.
69 ≴	40 %	32 ⋠		31 %	60 %	68 %
61 %	42 %	31 ≤	1	39 ≴	58 %	69 %
46 ≴	45 ≴	36 ≴	-	54 %	55 ≴	64 %
	1874. 69 ≴ 61 ≴	1n Blas 1874. 1875. 69 % 40 % 61 % 42 %	In Blast. 1874. 1875. 1876 69 \$\times\$ 40 \$\times\$ 32 \$\times\$ 61 \$\times\$ 42 \$\times\$ 31 \$\times\$	In Blast. 1874. 1875. 1876 69 \$ 40 \$ 32 \$ 61 \$ 42 \$ 31 \$	1874. 1875. 1876 187 69 x 40 x 32 x 31 x 61 x 42 x 31 x 39 x	Name

It will be noticed in the tables of percentages that the greatest changes have been in the charcoal and anthracite furnaces, and the least in the bituminous and further, that the percentages of the anthracite and charcoal furnaces in and out of blast have a remarkable similarity. which would seem to indicate that their relations to a market are such that any disturbance affects them very nearly alike. It will also be noticed that the decrease in the proportion of furnaces in blast has been only about half as great in the bituminous as in the anthracite since 1874, the decrease in one case being about 25 per cent. and 50 per cent. in the other. This will not be surprising when we remember that the effect of the panic on the blowing out of furnaces was more marked in the bituminous or coke regions than in the anthracite. Many of the latter furnaces had large stocks of ore on hand, and contracts for coal out, or else they mined their own ores and coal, and concluded it were better to run than to be to the expense necessary in keeping up idle mines. On the other hand, but few of the Western furnaces own mines, and are hence in a better condition to meet such a violent change as that produced by the panic; and again, the result has shown that the reduction of the number of furnaces in blast has a closer relation to the demand in the bituminous region, than in the anthracite. This is shown in the great reduction of stocks of coke pig iron in the West, they being virtually nothing. The report of Mr. Jas. M. Swank, secretary of the American Iron and Steel Association, on the stocks on pig iron on hand December 31st, 1874 and 1875. shows an actual increase of from 248,988 tons in 1874 to 274,743 in 1875 in anthracite irons, and a decrease of from 216,479 tons in 1874 to 165,482 in 1875 in bituminous irons.

Another noticeable fact is that the average capacity per week of the furnaces in blast is greater than of those out of blast, as the following will show:

Average capacity of furnaces in blast.97 tons per week e. 197 " " 5246 " " 203 " " 203 " "

This seems to show that the doctrine of the "survival of the fittest" is as applicable to furnaces as to animals, if not more In the struggle for existence it is the best furnace, most advantageously situated, having the most modern improvements that can make iron the cheapest, all things considered, and generally these are the ones with the greatest capacity.

In regard to stocks on hand there is this noticeable feature: the stocks in the hands of consumers, compared with what they carried two or three years ago, are very light, so that a larger per cent. of what iron there is in the country is in the hands of manufacturers than there has been for tent for agricultural machinery and imple remember. Of charcoal iron the stock is still large, although the amount in makers' hands has been very much reduced. There is of Lake Superior irons, say, 40,000 tons; of Missouri as much, if not more. There are also some heavy stocks at some of the furnaces South; while the stocks in the Hanging Rock have been and are still being reduced. The stock of charcoal iron at the furnaces in New England is perhaps 15,000 tons, and in New York not more than half of this.

The stocks of anthracite irons are still large enough to offer little inducement to furnace owners to blow in, though several have done so lately and others are preparing to do so.

We have so lately given our views on the stocks at the bituminous furnaces that we need not reneat them again. One thing is very sure, the stock of red-short coke iron is very small, and growing daily less.

Since the table was made up and the calculations made, we have received the following from Tennessee as to the state of the furnaces in that section:

corresponding dates in 1874 and 1875. We have returns of the same nature made at these dates which, with those of '76, are as There will be but one or two furnathese dates which, with those of '76, are as follows:

Fuel. In Blast. Out of Blast.

Out of Blast. Out of Blast.

1874 1875 1876

The Centennial Awards

We present on the opposite page a part of the selections we have made from the voluminous report of the judges of the Centennial Exposition. Those omitted this week will be given in our next issue. The awards were declared last evening at 8 o'clock, and reached us at midnight by special messenger from Philadelphia. lateness of the hour and the crowded state of our columns, prevent any extended editorial comments. We can only say that, from the best information we have been able to obtain, the judges have worked faithfully and intelligently, and the system followed in their appointment has given general satisfaction. It is, of course, impossible for a jury, however constituted, to satisfy the expectations of all who are competitors for bonors, and while we congratulate those who have secured the coveted awards, those who have not may derive ome satisfaction from knowing that the work of discriminating has not been an easy one, and that infallibility of judgment cannot be claimed even for an international jur,

Bessemer Steel.

The Bessemer steel industry seems to be fast approaching the same condition as the iron. A large production, a limited demand and a consequent anxiety to get orders, have reduced the price to such a figure that only the most favorably located mills can make rails and cover cost and interest. The others must either make rails at a loss or stop work. If the loss were slight, some mills would still prefer to run for awhile at least, as the loss would be no greater than the expense that would be going on while the works were stopped, such as permanent salaries, care of machinery, etc. But the trouble is that in some cases this loss is so great as to preclude this idea, and there is but one recourse, and that is to stop. Some of the Bessemer works are already out of the market. They have a few orders still left at the old prices, and will run on those till finished, but they will take no orders at rates which, it is whispered, have been offered, and the prospect is that some of our steel mills will run very light this winter, or not at all. It may be that the low rates at which steel rails can be bought will induce roads that have been using only iron to adopt steel in making repairs, especially in those parts of the track upon which the greatest wear comes, and there is also a prospect of a moderate revival of railroad building. This will make an additional demand, and between both of these, and under the operation of other influences, there may be such an advance in rails as to barely cover cost at most of the mills. But this will be an unsatisfactory state of trade, and one that will demand some permanent remedy at the earliest possible moment.

This remedy must be looked for in the

increased use of Bessemer for purposes other than rails. It has already been successfully applied to a large number of uses, such as screws, wire, ties, nails, horseshoes, crowbars, &c., but the amount demanded for these purposes at present will not nearly consume the crop ends of the rails. It has also been used to some exments, and for cranks, shafts, &c., but these hardly touch upon the product of the mills. What is needed is such a demand as will consume a portion of the regular product and not merely a part of the waste. Some of our crucible steel mills are using Bessemer to some extent as a portion of the mixture for the charge of the crucibles, and this will be still further increased. In France the consumption of Bessemer for purposes other than rails is quite large; how large we cannot say, as are combined. The reason that a general market for Ressemer metal has not been made in this country is not difficult to find. Until within a comparatively recent period the mill owners have not felt the necessity profitable market for their product. They waste attending the process of rail making, and were nearly, if not quite, indifferent to the fact that a large percentage of the metal poured from the converters was accumulating as a waste product. Up to this

Condition of Blast Furnaces in United States, Sept. 1, 1876.

		(CHARCO	DAL.			A	NTHRA	CITE		В	ITUM	Coki		AND
Localities.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast,	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.
New England		4 3	270	14	1,026	1 43	13	2,935	30					****	
New York New Jersey	16		205	11	004	16		2,950			****	****	****	****	****
Penna, †	39					20		000	10	2,000					****
Lebigh Val.						50		4,450							
Sch'lkill V.						50		2,760			****	****	****		
Upper Susq						25		570					****		
Lower "						36		2,525				****	1 000		0.40
Pittsburgh.											11	5	1,800	6	
Allegh'y V. Sh'n'go V.											31	5	1,425		
											5		525		
Juniata and C'nem'gh															
Valleys			1111	10	548					450	21	11	1,930		
Maryland	15 31	6	365 214	10 25	1,224	1			8	450 140	6 5		130	5	
Virginia N. Carolina	7	1	70	6	192					1.20	1	1	75	1	
W. Virginia	6	2	115	4	331			****		****	6	3	1,080		
Ohio		100			****			****		****			1,000		00
Mahon'g V.			****		****		****	****			21	9	2,150	12	2,62
East'n, C'n-															,
tral and											28	10	0.850	10	0.00
N'rthern. Hang. Rock	9.4	17	1,398	17	1,410						15	12	2,550 1,050	16 12	
Miscel'ous	3		100	2									1,000	1.0	1,000
Kentucky			****					****							
Hang. Rock	10	4	300	6	450						3	2	600	1	120
West'n Re-															
Miscel	8	2	160	4	210						0			2	000
Tennessee †	18				010						4	2	435	2	600 425
Jeorgia	9	1	40	8							3		470		200
Alabama	13	4	570	9	795						2	1	250	1	250
ndiana	1	1	140								8	1	275	7	1,080
llinois	30	12	1.895	18	9 170						12		1,200	8	2,80
Michigan Wisconsin	11	3	370	9	2,170 1,005						#3	1 2	275 700	3	300
Minnesota	1			1							-6	10	100		900
Missouri	11	3	505	8	1,165						8	4	1,850	4	1,390
Texas	1				****					****					****
Jtah	2														
Oregon	1	1	80												****
Totals	285	70	6,797	152	12,009	225	70	13,790	155	28,605	209	76	18,675	133	27,065

*Some anthracite is used at part of these furnaces as a mixture, but the iron is essentially a

bituminous from . We have no report on Pennsylvania or Teunessee charcoal furnaces, but the majority of them are out of blast.

calculated to demonstrate the general | ations were greatly disappointed. When it can be so worked as to make good tools is doubtful. We have an excellent Besselated by a peculiar, and as yet secret, proto any other grade of steel, or to iron. haps deeper and more penetrating. Crop ends are cheaper than any other grade of steel which can compete with that this improvement of the channel and if the owners of the Bessemer mills change the course of commerce by open-The problem of economically rerolling of as great draught of water as those in them has not yet been solved, but results ordinary European trade. The frequent have been reached which give promise of fogs are a much greater danger to a large success for future experiments. They can, vessel in the Sound than they would be at however, be rolled down into good bar sea. It would be necessary to employ a steel, and there is very little probability pilot for the whole length of the Sound, that they will not be utilized when it is nearly two hundred miles. To our understood that bar of this character is as coasting trade, however, the value of cheap as iron, and as much better for a the improved channel is almost ingreat variety of uses as steel rails are better calculable. Some idea can be formed than iron. But there are not enough old of it by those who live in the vicinity and Bessemer rails in the market to seriously have seen the almost innumerable wrecks or long embarrass the makers in their ef- upon those rocks and reefs. The sight of forts to work off their waste, and we trust a coaster on the rocks is something that that, for the welfare of a most promising has ceased to excite comment, and it is industry, they will not fail to manifest due only when life is lost that such an event as enterprise in this direction.

The Hell Gate Explosion.

On Sunday last, at ten minutes of three in the afternoon, the mine at Hell Gate was fired, and the Hallett's Point reef ceased to the returns for Bessemer and Martin steel exist. As one of the morning papers phrased it, "seven years' work ended in a 'flash." Seven years' of labor in the tough rock of the reef had resulted in a honeycomb of passages extending under the surface to the extent of some three for looking beyond the railroads for a acres. The roof and supporting pillars of rock were then drilled, the holes for could even afford the large and continuous blasting numbering something like 4000. In these were placed some 13,000 cartridges containing explosives to the amount of more than 52,000 pounds, or about 25 tons. These were of dynamite, rendrock and similar nitro-glycerine compounds, and, those interested, combining to reduce the make below the furnace capacity.

A careful study of the table will show several facts that cannot fail to be of interest to those interested in pig iron. The first is that a much larger proportion of furnaces are out of blast this year than at the furnace in that section:

There is but one furnace on the Tennessee River running. "La Grange" (that not regularly the important economy upon which the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent common proportion of the furnaces of which four are running, two of them on very short blasts. But one furnace has from on hand." Cumberland."

There is but one furnaces on that requirements that section:

There is but one furnaces on that requirements the greatest quantity of effecting the important economy upon which the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent common proportion of the furnaces, of which four are running, two of them on very short blasts. But one furnace has from on hand." Cumberland."

There is but one furnaces on that requirements compounds, and, time they have done but little toward while this was not the greatest quantity of effecting the important economy upon which the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent common proportion of the necessity for a close and intelligent common proportion of the furnaces of the proportion of the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent common proportion of the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent common proportion of the future of the industry now so largely depends. But their immunity from the reconomy upon which the future of the industry now so largely depends. But their immunity from the reconomy upon which the future which the future of the industry now so largely depends. But their immunity from the necessity for a close and intelligent economy was only temporary, and they cannot too soon have recourse to means the largest charge ever exploded. The success was all that could have been desired by the engineers, although the immense crowd which had assembled to witness the oper-immension worth of water meters are made annually.

utility of Bessemer metal in the arts. We the mine was fired the first visible effect speak advisedly when we express the be- was a raising of the water covering the exlief that it can successfully compete with cavation, and a breaking into foam at the other low steels for general use. Whether same instant; the following moment the whole mass shot bodily into the air, a mass of foam, to a hight of perhaps 75 feet, and mer steel file, and have seen good cold before it had time to fall the mass of the chisels made from it, but it was manipu- coffer dam with the muddy water contained in it was thrown upward and over cess which may be too costly to admit the other mass to a total hight of not over of general application. That Bessemer 100 feet. No stones or masses of rock or steel can be used in all classes of forged water were thrown to any distance and work, is a fact well known. It works well there was no damage done worth speaking under the hammer and, contrary to the of. The shock was slight in most locatraditions of the blacksmithshop, it can be tions, and the noise apparently not greater welded upon itself with ease and certainty, than that of a very heavy gun, though per-

It has been very generally believed Bessemer in quality and general utility, by the removal of Hallett's Point reef will cannot sell to advantage their waste prod- ing a new route for the European steamuct in the shapes in which it has hereto- ers. This is a mistake. The present fore accumulated, they have, it would seem, | channel through Hell Gate is not only too no other recourse than to manufacture it narrow, too crooked, and has too swift a into the many useful forms in which it current to enable very long ocean steamwill readily command a market. It is not ers to pass through it with safety, but the improbable that old Bessemer rails will navigation of the Sound is difficult and come into competition with new metal. dangerous for steamers or sailing vessels a wreck is worth mention. This is unfortunately altogether too common.

The increased area of the river at this point, together with the easier course for the current, has already caused a marked change in the character of the eddies and direction of the currents, and it is probable that the velocity of the tide-way in the East River will be materially increased. while its duration is likely to be less. The reason for this is found in the fact that, at Hell Gate, the river has the smallest area practically, and hence is the controlling section, and its enlargement increases the volume of water flowing in a given time. As this volume increases the time, of course, diminishes. In the past thirty years the current has perceptibly increased in velocity in the East River according to old steamboat engineers, and in the future we may see a somewhat further increase as our Eastern water way is improved.

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Rails, Bars, Forgings, Axles, Spikes, Nalls
and Horseshoes.
Bay State Iron Co., Mass., Boiler Plate made
from Siemens-Martin Metal.
Benedict & Buruham Mfg. Co., Waterbury,
Conn., Copper, Brass, German Silver, etc.
T. F. Witherbee, Port Henry, N. Y., Combined
Water Block Tuyere and Nozzle for Blast
Furnaces.

Ave & Hartman, Philadelphia, Blast Furnace Apparatus. Hussey & Co., Pittsburgh, Copper, Brass, etc. Hussey, Wells & Co., Pittsburgh, Crucible Steel Plates and Bars. Ingersoll Rock Drill Co., New York, Rock Drill,

Jorill.

Jones & Laughlin, Pittsburgh, Cold Rolled
Wrought Iron Shafting.

The Lackawanna Iron and Coal Co., Scranton,
Pa., Bessemer Pig Iron and Wrought Iron
Bars.

Bars.
The Cambria Iron Co., Johnstown, Pa., Raw Materials for Iron Manufacture and Iron and Bessemer Steel Rails and Bars.
Cartwright, McCurdy & Co., Youngstown, O., Hoop Iron.
James C. Jackson, N. Y., Castings made by novel methods.

novel methods. Riverside Iron Works, Wheeling, W. Va.,

Riverside Iron Works, Wheeling, W. Va., Wrought Iron.
Shelby Iron Co., Alabama, Pig Iron.
Woodstock Iron Co., Alabama, Iron Ores, Pig Iron for Car Wheels and Spiegel.
The Barnum-Richardson Co., Lime Rock, Conn., Pig Iron for Car Wheels.
O. W. Davis, Bangor, Pig Iron.
Pope, Cole & Co., Baltumore, Copper.
Rese, Graff & Woods, Pittsburgh, Wrought Iron and Steel Bars and Horseshoes.
Phosphor-Brouze Smelting Works, delphia, Phosphor-Bronze.
Revere Copper Co., Boston, Copper, Brass, Bronze, Cannon, etc.

Bronze, Cannon, etc.
Farist & Windsor, Bridgeport, Conn., Steel.
Weimer Machine Works, Lebanon, Pa., Blowing Engine and other Blast Furnace Machin-

ery. Worthington & Sons, North Amherst, O., Grindstones and Scythe Stones and Sandstones.
Washington Mills Emery Mfg. Co., Ashland,

Washington Mills Emery Mfg. Co., Ashland, Mass., Emery.

Tatham & Bro., Philadelphia, Sheet Lead and Tin-Lined Lead and Iron Pipes.

Edwin P. Bell, Chicopee, Mass., Steam Stamping Machine for Crushing Ores and Rocks.

Glasgow Port Washington Iron and Coal Co., Port Washington, O., Pig Iron.

Tuscarawas Coal and Iron Co., Cleveland, Pig Metal.

Metal. E. Mitchell, Philadelphia, Grindstones and Fixtures.
The Tubular Barrow and Truck Mfg. Co., New York, Furnace Wheelbarrows. Philadelphia Galvanizing Co., Philadelphia, Gal-

Philadelphia Galvanizing Co., Philadelphia, Galvanized Sheet Iron.
Phœnix Iron Co., Philadelphia, Rolled Iron Beams, Columns and Shapes.
Penn. Galvanic Works, Philadelphia, Galvanized Sheet Iron.
McCullogh Iron Co., North East, Md., Galvanized Sheet Iron.
Marshall Bros. & Co., Philadelphia, Sheet and Bar Iron and Galvanized Iron.
M. M. Manly & Son, Pa., Rolled Iron Hand Rail.

Rail.

Passaic Zinc Co., N. Y., Ores, Spelter, Sheet Zinc and Castings and Zinc Oxide.

Prof. De Volson Wood, Stevens Institute, Hoboken, N. J., Rock Drills.

Wilbraham Bros., Philadelphia, Baker's Pressure Blower.

J. E. Strauss & Co., Philadelphia, Galvanized Sheet Iron.

Keystone Bridge Co., Pittsburgh, Iron for Bridges.

Amherst Stone Co., Cleveland, Grindstones. George K. Tyson, Philadelphia, Phosphor-Bronze.

Pennsylvania Steel Co., Harrisburg, Objects of Steel, and Steel Ingots.

Pennsylvania Steel Co., Harrisburg, Objects of Steel, and Steel Ingots. Diamond State Iron Co., Wilmington, Del., Iron Bolts, etc. Wilson, Walker & Co., Pittsburgh, Wrought Iron Forgings.

N. and G. Taylor & Co., Philadelphia, Tin Plate.
Lehigh Zinc Co., Bethlehem, Pa., Ores, Spelter, Sheet Zinc and Zinc Oxide.
Niblock, Zimmerman & Alexander, Brazil, Ind., Compressed Air Coal Cutting Machine.
Wm. Clark & Co., Pittsburgh, Hoop Iron.
P. H. & F. M. Root, Connersville, Ind., Rotary Power Blower.
Edgemoor Iron Co. (Wm. Sellers & Co.), Phila-Power Blower.
Edgemoor Iron Co. (Wm. Sellers & Co.), Philadelphia, Rotary Puddling Furnace and Links

Briass, Zinc. Bridgewater Iron Co, Bridgewater, Mass., Brass and Copper Tubes, Chilled Rolls, Wrought

Bridgewater fron Co., Bridgewater, Mass., Brass and Copper Tubes, Childed Rolls, Wrought Iron, Steel Forgings and Nails. Horace A. Beale, Parkesburg, Pa., Wrought Iron Plates and Puddled Bars. Adirondack Steel Works, Jersey City, Steel Ingots and Forgings.
Yale Lock Mtg. Co., Stamford, Conn., Nickel

Anodes.
J. T. Wilder, Chattauooga, Tenn., Collection of Marble and Ores. Vitrified Wheel and Emery Co., Ashland, Mass. Manufactured Emery. Valentines & Co., Bellefonte, Pa., Pig and Wrought Iron. Mrstown Iron Co., Pottstown, Pa., Wrought

Potstown Iron Co., Pottstown, Pa., Wrought Iron Plates and Bars. Philadelphia and R. R. Co., Reading, Iron Rails and Rail Piles.
Singer, Nimick & Co., Pittsburgh, Martin and Crucible Steel Plates and Bars.
Boyd & Chase, New York, Oil Stones.
Henry Roberts, Newark, N. J., Steel Wire.
Lehigh Whetstone Co., Allentown, Pa., Whetsteel

B. Kreischer & Son, Philadelphia, Fire Clay and other Clays. Dover Fire Brick Co., Canal, Dover, O., Fire Clay. . & H. Brooke, Birdsboro, Pa., Wrought

Iron. J. T. Ames, Springfield, Mass., Enery. American Tube Works, Boston, Brass and Copper Tubes.
Calumet and Hecla Mining Co., Mich., Copper and Copper Ores, with Mødel of Stamping Mill.

Stamping Mill.

New Jersey Zinc Co., N. J., Spiegeleisen.

Moorhead & Co., Pittsburgh, Sheet Iron and
Galvanized Iron.

A. O'Neil, Ansonia, Conn., Planished Nickel,

Rrass, Conner, etc.

Brass, Copper, etc.
Passaic Rolling Mill Co., N. J., Rolled Wrought
Iron Beams and Shapes.

Lead.
Chrome Steel Co., Brooklyn, Test Steel, Soft Steel and combined Steel and Iron Plates.
Pottstown Iron Co., Pottstown, Pa., J. C. Gould's Nail-Feeding Machine.

B. F. Sturtevant, Boston, Sturtevant Fan and B. F. Sturtevant, Boston, Sturtevant Fan and Pressure Blowers.
H. Burden & Sons, Troy, Wrought Iron Bars and Horseshoes.
Henry Disston & Son, Philadelphia, Cast Steel Ingots, Blooms and Plates.
S. C. Forsaith & Co., Manchester, N. H., Abbe Bolt Forging Machine.
John Hyslop, Jr., Arlington, Mass., Tack Machine.
Lobdell Car Wheel Co., Wilmington, Del., Rivet-Making Machine.
Pennsylvania Tack Works, Norristown, Pa., Machines for Making Tacks.

chines for Making Tacks Plumb. Burdict & Barnard, Buffalo, Bolt Forg ing Machine.
C. W. Jenks, Jenks' Mine, Macon county, N.

C. W. Jenks, Jenks' Mine, Macon county, N. C., Corundum.

Brown & Co., Pittsburgh, Wrought Iron Boiler Plates and Bars.
Blake Crusher Co., New Haven, Machine for Crushing Ores, Stones, etc.
Union Iron Co., Buffalo, Wrought Iron Beams Union Iron Mills, Pittsburgh, Rolled Iron

Union Iron Mills, Pittsburgh, Rolled Iron Shapes.

The Washburn & Moen Co., Worcester, Mass., Iron and Steel Wire.
Bridgewater Iron Co., Bridgewater, Mass., Copper and Brass.
Waterbury Brass Co., Waterbury, Conn., Brass, German Silver.

Alan Wood & Co., Philadelphia, Planished Sheet Iron.

Alan Wood & Co., Philadelphia, Planished Sheet Iron.

W. D. Wood & Co., Pittsburgh, Planished Sheet Iron.

William Wiler, Philadelphia, Brass.
Philadelphia Iron and Steel Co., Philadelphia, Rolled Iron Shapes.
Phillips, Nimick & Co., Pittsburgh, Wrought Iron Bars and Boiler Plates.
John Roach & Son, Chester, Pa., Iron Boiler Plates and Forgings of Large Dimensions.
James Rowland & Co., Philadelphia, Wrought and Steel Sheets and Bars.
Scoville Mfg. Co., Waterbury, Conn., Brass, German Silver, etc.
Stewart & Co., Easton, Pa., Wire.

Stewart & Co., Easton, Pa., Wirc.
The Edgar Thompson Steel Co. (Limited), Pitts-burgh, Bessemer Steel Ingots, Rails and Forg-

ings. Manhattan Brass Co., New York, Brass, Copper, Zinc, etc.
The Midvale Steel Works, Pa., Tubes, Bars,
Forgings and Castings of Crucible and Siemens-Martin Steel. Miller, Metcaif & Farkins, Pittsburgh, Crucible

Miller, Metcait & Farkins, Pittsburgh, Crucible
Steel for Tools.

I. P. Morris & Co., Philadelphia, Blowing Engine for Blast Furnace.

The Nashua Iron Co., Nashua, N. H., Iron and Slemens-Martin Steel Forgings.

New Bedford Copper Co., New Bedford, Mass.,

New Bedford Copper Co., New Bedford, Mass., Copper.
Otis Iron and Steel Co., Cleveland, Siemens-Martin Steel Boiler Plate.
Park Bros. & Co., Pittsburgh, Crucible Steel Boiler Plate and Bars.
A. Garrison & Co., Pittsburgh, Chilled Rolls.
A. G. Harris, Johnstown, Pa., Brick Bottoms and Tuyeres for Bessemer Converters.
James Henderson, Harrisburg, Pa., Malleable Iron.

Holmes, Booth & Hayden, Waterbury, Conn., Brass and German Silver. Catasauqua Iron Co., Catasauqua, Pa., Wrought Iron Bars.

Bowen & Signer, Saranac, N. Y., Wrought Iron
Blooms, Bars and Horse Nails.

American Galvanizing Works, Pa., Galvanized

American Galvanizing Works, Pa., Galvanized Sheet Iron.
Allentown Bolling Mill Co., Allentown, Pa., Wrought Iron Bars.
Potts Brothers, Pottstown, Pa., Boiler Plate.
Terre Noire La Voulte et Besseyes Co., France, Lyons, Ferro-Manganese.
Marselles Gas Co., France, Marselles, Spiegeleisen, Ferro-Manganese.
E. Secretan, France, Parls, Copper, Brass, etc. Steel Co. of Canada, Canada, Londonderry, Ores, Iron and Steel.
Bogoslavsky, Russia, Crown Copper Works, Copper.

Sogoslavsky, Russia, Crown Copper Works, Copper.
P. Demidoff, Privee of San Donato, Russia, Tajil, Copper Ore and Copper, Iron Ores, Pejeron Spiegel, Sheets of Wrought Iron, Products of Bessemer Metal and Stemens-Martin Metal. Valere Mabilie, Belgium, Wrought Iron Forg-

Valere Mabilie, Belgium, Wrought Iron Forgings.

Forge and Rolling Mill Joint Stock Co., Belgium, Regissa, Iron Forgings.
Charleroi Societe Anonyme, Belgium, Wrought Iron Bars and Boiler Plates.
Acieries de Angheim, Belgium, Bessemer Steel. Jonas, Meyer & Colver, England, Sheffield, Cracible Steel for Tools.
Swansea Tin Plate Co., Great Britain, Swansea, South Wales, Tin Plate.
W. D. Houghton, Great Britain, Warrington, Steel Wire.
Kay & Hilton, England, Liverpool, Mill Stones and Shelling Stone for Rice Huddling.
Hatton Sons & Co., England, Bliston, Tin Plate.
Hawksworth, Eillson & Co., England, Steel.
Geo. King Harrison, England, Stourbridge, Fire Clays.
Ash & Lacy, England, Tinned Iron and Zinc Plates.
Ch. Hardy, Patent Pick Co. (Limited), England

for Bridges.

Cooper, Hewitt & Co., New York, Wrought
Iron, Besms, Bars, Chains and Wire.

Crocker Bros. & Co., Taunton, Mass., Copper,

Chas. Camuell & Co., Great Britain, Sheffield,

Chas. Cammell & Co., Great Britain, Shemeld, Armor Plates.

John Brown & Co. (Limited), Great Britain, Sheffield, Armor Plates.

Wm. Baird & Co., Scotland, Iron Works, Cout-bridge, Coal Cutting Machine.

John Oakey & Sons, England, Wellington Emery Mills, London, Emery Grains and Flour.

Thomas Whitwell, Great Britain, Regenerative
Hot Blast Stove.
The Western Cumberland Iron and Steel Co.,
England, Workington, Bessemer Pig Iron
and Steel Products.
Wm. Smith & Sons, Great Britain, Warrington, Steel Wire. Fred. Smith & Co., England, Halifax, Steel E. Morewood & Co., South Wales, Llanelly, Tin Plate.
C. W. Siemens, England, London, Regenerative
Gas Furnace.
Phosphor-Bronze Co., England, London, Phos-

phor Bronze. Henry Nash & Co., England, Liverpool, Tin Wissener Bergwerks and Hutton Actien-Gesell-

Wissener Bergwerks and Hutton Actien-Gesellschaft, Germany, Wissen, Spiegeleisen.
A. Borsig, Prussia, Berlin and Borsigwerk,
Wrought Iron and Siemens-Martin Steel
Forgings and Steel Plates.
Burbacker Hutte, Burtback, Saabruck, Beams,
Channel Bars and other Shapes.
Aaron Hirsch & Son, Germany, Messingwerk
bei Neirstadt Ebenwalde, Copper, Brass,
Tube and Sheet Wire, etc.
F. Krupp, Germany, Essen, Crucible, Bessemer
and Mortin Steel, and Wrought Iron, in Forgings, Stamped Work, Plates, etc.
Lohmann & Soding, Germany, Witten am Rubr,
Crucible Steel Sheets and Hoops.
Westfalischer Union, Prussia, Hemm, Malleable Iron and Wire.

Westfalischer Union, Prussia, Reilin, standable Iron and Wire.
Actien-Gesellschaft Heinrichshutt, Germany, near Au a. d. Seig., Spiegeleisen.
Rufter & Co., Germany, Breslau, Sheet Zinc.

Actien-Gesellschaft Charlossenhuste, Germany,
Niederschelden, Spiegeleisen.
Coln-Musener, Bergwerks, Actien-Verein, Germany, Crenzthal, Spiegeleisen.
Obookhof Steel Foundry, Russia, St. Petersburg, Tires and Axles of Bessemer Steel.
Pontilof Iron Works Co., Russia, St. Petersburgh, Puddled Steel, and Products of Siemens-Martin Steel and Drilled Shot.
Rasterjaeff, Gregory, Russia, St. Petersburg,
Sheet Iron and Iron Castngs.

Sheet Iron and Iron Castings.

Administration of the Mining District, Russia,
Western Poland, Spelter, Sheet Zinc and Cadmium. Cadmium. lussian Rail Manufacturing Co., Russia, Riazan, Fine Wire, and Pig Iron furnishing

the same.
Cathrinchalnis Iron Works, Norway, Frederickshald, Bar Iron, Chains, etc.
Uddeholms, Sweden, Ores—Pig Iron, Malleable Iron, and Siemens-Martin Metal.
Sandrickens Iron Works Co., Sweden, Gefle, Iron Ores, Bessemer Steel.
W. Weaver, United States, Phonixville, Rock Drill.

Drill.
. & J. Rogers Iron Co., Iron. J. & J. Rogers Iron Co., Iron.
Ponsard & Gigle, Italy, Ferro-Manganese.
Aktle Bolog Bofors Gullspang, Sweden, Ores,
Pig Iron, Wire and Nail Rods.
Fagersta Bruk, Sweden, Iron Ores, Pig Iron,
Bessmer Ingots, and articles of Bessemer
Steel

Steel.

Jernkotoset, Sweden, Geological Maps, Plans of Iron Mines, Iron Ores, Iron and Steel products therefrom, Drawings of Fornaces.

Motala Mekaniska Verkstad Actie, Sweden, Bolay, Iron Ores, Pig Iron, and products in Bessemer and Siemens-Martin Metal, as well as in Puddled Iron and Steel.

Imperial Works of Kama, Russia, Rolled Iron. Salvator Sabate Brunet, Spain, Barceiona, Mining Tools.

ing Tools.

Dover Fire Brick Co., Canal Dover, O., Fire

Dover Fire Brick Co., Canal Brick.
Brick.
B. Kreischer & Son, New York, Clay Retorts, Muffle or Assay Furn Ices.
Robert Taylor & Co., Philadelphia, Black Lead Crucibles, and large Stills for Zinc.
Urion Mining Co., Mt. Savage, Md., Fire Brick for Blast Furnaces, and Siemens-Martin's

Furnices.
Phænix Mfg. Co., Taunton, Muss., Black Lead Crucibles for Smelting Steel, Bronze, etc., and Stills for Zinc.
Geo. C. Hicks & Co., Baltimore, Clay Retorts, Gas Works Tiles and Fire Brick.
Philip Newkumet, Philadelphia, Clay Retorts and Fire Brick.
Kier Bres. Saling Pa. Fire Brick European

and Fire Brick.
Kier Bros., Salina, Pa., Fire Brick, Furnace
Brick, Arches and Keys.
A. J. Haws, Johnstown, Pa., Fire Bottom for
Bessemer Steel Converter, Fire Clay Tuyeres,
Patent Nozzles and Siuices for Ladle Rods
and Furnace Brick.
Newton & Co., Albany, Fire Brick Linings for
Stoves, etc.

Stoves, etc. Louisville Plate Glass Co., Louisville, Ky., Large Glass Plate.

Wm. L. Gregg, Philadelphia, Brick Machine, and Ceramic Gas Kilu.

Excelsior Brick and Stone Co., Philadelphia, Excelsior Brick Machine.

Excelsior Brick Machine.
Augustus Morand, Philadelphia, Plastic Brick
Machine and Kiln.
S. Williams & Son, Philadelphia, Brick Presses.
F. L. & D. R. Cornell, Philadelphia, Brick
Presses, of various sizes.
S. P. Miller & Sons, Philadelphia, Hand Presses

for Bricks.

I. P. Alexander, Akron, O., Fire Bricks.
Isaac Gregg, Jr., & Co., Philadelphia, Brick Machine Hall & Sons, Perth Amboy, N. J., Fire Davis & Chaddock, Boston, Fire Brick.

Group IV.

Rankin Mfg. Co., Pittsburgh, Meat Choppers. Boomer & Boschert, Syracuse, N. Y., Presses. August Mittinger, Jr., Philadelphia, Butchers' Tools, Meat Choppers, etc. Balley Wringing Machine Co., New York, Bailey Wringing Machine Co., New York, Meat and Vegetable Choppers. Murray Iron Works, Burlington, lowa, Meat Cutters.

Group V.

A. B. Shipley & Sons, Philadelphia, Rods, Bradford & Anthony, Boston, Anglers' Implements, Hooks, etc.
White Mfg. Co., Bridgeport, Fishing Lamps.
John Russell Cutlery Co., Turner's Falls, Mass.

Fishing Knives.
Elwell, Jr., Gloucester, Mass., Fishing

Group VI.

C. B. Evans & Co., Cincinnati, Cast Iron Marbleized Mantels. Clark & Co., New York, Steel Shutters.

Group VII.

Lash & Co., Philadelphia, Washing Machine. Bradford & Co., Philadelphia, Sash Fastener. W. M. Smith, West Meriden, Conn., Casket Trimmings.
ational Wire Mattress Co., New Britain, National

Conn., Wire Mattress. Calkins Champion Washer, Chicago, Washing Machines. Colby Wringer Co., Waterbury, Vt., Clothes K. Dugdale, White Water, Ind., Clothes Barnard, West Fitchburg, Mass., Clothes

Wringer.

A. B. Barnard, West Fitchburg, Mass., Clothes Mangles.

J. W. Pratt, Philadelphia, Washing Machines.

T. E. Grove, Cleveland, Washing Machine.

York Mfg. Co., York, Pa., Washing Machine.

Oakley & Keating, New York, Washing Machine. Isaiab D. Buck, Bridesburg, Pa., Washing Ma-Lloyd Bros., Philadelphia, Ventilating Window

Shade Fixture.

Asa E. Worden, Smyrna, Del., Washing Machine.

H. A. Briggs, Shaker Village, N. H., Washing H. A. Briggs, Shaker Village, N. H., Washing Machine. Cheney, Hopkinton, Mass., Washing Machine A. W. Jennings, Bedford, O., Washing Ma

The Hartford Woven Wire Mattress Co., Hart-

The Hartford Woven Wire Mattress Co., Hartford, Conn., Woven Wire Mattresses, etc.
William Campbell, New York, Spring Rollers for Window Shades.
Salem Shade Roller Mfg. Co., Salem, Mass.,
Balance Spring Shade Roller, etc.
Maires & Reed, New York, Adjustable Iron
Chair Frame.
Reed & Barton, Taunton, Mass, Casket
Trimmings. Reed & Barton, Taunton, Mass, Casket Trimmings. Lowerre & Tucker, Newark, N. J., Fluting Ma-

chine. C. Rogers & Co., West Meriden, Conn., Casket Trimmings. ewton, Wilson & Co., England, London, Newton, Wilson & Washing Machine

Group VIII.

Sellers Mfg. Co., Philadelphia, Wire Cloth for Paper Machines. Clintou Wire Cloth Co., Clinton, Mass., Wire Fire-proof Lathing, Fencing Screens. Asbestos Patent Fiber Co., Philadelphia, As-bestos, Fiber and Fabric.

Woven Wire Mattress Co., Hartford, Conn. Wire Mattresses. Wire Mattresses.
Dewitt, Bros. & Co., Belleville, N. J., Fine
Wire Cloth.
ennsylvania Wire Works, Philadelphia, Wire

Goods,
J. B. Brown & Co., Great Britain, London, Galvanized Wire Netting.
N. Greening & Sons, Great Britain, Warrington, Woven Wire.
Ph. J. Schoeller & Sons, Bavaria, Neustadt, Wire Cloth, double twilled.
J. Anderson, Sweden, Kjardingagarde, Griosso, Wire and Sieve Cloth.
Louis Herrmann, Jr., Bavaria, Dresden, Wire Goods.

Louis Herrmann, Jr., Bavaria, Dresden, Wire Goods. Barnard, Bishop & Barnards, Great Britain, Nor-wich, Wire Fencing.

Pope Mfg. Co., Boston, Rifle Air Pistol. National Rubber Co., Providence, R. I., Belting. New York Belting and Packing Co., New York,

Group XI.

Derby Silver Co., Derby, Conn., Plated Table

Ware.
Holmes, Booth & Hayden, Waterbury, Conn.,
Silver-Plated Goods.
Mitchell, Vance & Co., New York, Bronze,
Marble, Zinc, and Imitation of Bronze.
Gorham Mfg. Co., Providence, R. I., Silver

Ware. Mes Mfg. Co., Chicopee, Mass., Bronze. 2. L. Krider, Philadelphia, Solid Silver Table

P. L. Krider, Philadelphia, Solid Silver Table and Hollow-Ware.

Gorhum Mfg. Co., Providence, R. I., The Century Vase in Solid Silver.

Tiffany & Co., New York, Silver Work.

Reed & Barton, Taunton, Mass., Silver-Plated Goods and Nickel-Plated Vase.

Adams, Shaw & Co., Providence, R. I., Silver Plate.

Manning, Bowman & Co., West Meriden, Conn., Nickel-Plated Ware.

Group XIII.

los. Dixon Crucible Co., Jersey City, Lead Pencils.

Hart, Bliven & Mead Mfg. Co., New York, Stationary Hardware.

French Paper Ware Co., Springfield, N. J.,

Paper Ware.

A. W. Faber, Germany, Stein near Nuremberg,

Lead Pencils, Artista' Pencils, Colored Pen-

Group XIV.

W. H. Jackson & Co, New York, Grates and Fenders for Open Fires and Fire Places. Dover Stamping Co., Boston, Dover Egg

Beater.
Austin, Opdyke & Co., Philadelphia, Galvanized Corrugated Rain Spout.
Pennsylvania Galvanic Works, Philadelphia,
Galvanized Goods of all Descriptions.
Duncan Cameron, New York, Steam Fruit Pre-

servers.
Redlichs Mfg. Co., Wooden Faucets saturated with India Rubber. United States Soapstone Furnace Co., Boston Spapstone Furnace.
Wakefield Earth Closet Co., New York, Earth

losets, Cabinet Closets. Keller Mfg. Co., Harrisburg, Pa., Standard The Keller Mig. Co., Harrisourg, Fu., Standard Quart Measure. Geo. I. Mix & Co., Yalesville, Conn., Iron and Britannia Spoons, Silver-Plated Water Cool-

ers, etc. os. H. Corey, New York, Improved Culwary Jos. H. Corey, New 1913, Stores for Par-Boiler, etc.
Detroit Stove Works, Detroit, Stoves for Par-

Detroit Stove Works, Detroit, Stoves for Parlors, Halls, Stores, etc.
Henry Chatain, Washington, D. C., Oven for Buking, Confectioners, Hotels, etc.
Sidney Shepard & Co., Buffalo, Ice Cream Freezers, Patented Palace Coal Vases, Noveity Oil Cans.
Isidor Brach, Philadelphia, Reversible Water Filter, etc.

Isidor Brach, Philadelphia, Reversible Water Filter, etc.
Tuttle & Bailey, New York, Vertical Wheel Registers for Heating and Ventilation.
Newark Tea Tray Co., Newark, N. J., Tray and Waiters (Japanned).
Musgrove & Son, New York, Planished and Japanned Silver Ware.
Charles Noble & Co., Philadelphia, Stoves, Ranges, etc.
Ella Haller, New York, Reservoir Fruit Jar.
Enterprise Mfg. Co., of Pennsylvania, Philadelphia, Double Pointed Smoothing Irons, Sausage Stuffer and Coffee Mill.
J. Eldridgo Smith, Philadelphia, Double Griddle.

Griddle.

Jacob H. Polhamus, New York, Refrigerating
Cupboard and Safe.

Smith Refrigerator Co., Albany, Dry Air Re-

Smith Refrigerator Co., Albany, Dry Air Refrigerator.

Charles G. Blatchley, Philadelphia, Horizontal Ice Cream Freezer.

Stuart, Peterson & Co., Philadelphia, Tinned and Enameled Cast Iron Hollow-Ware.

W. S. Carr & Co., New York, Bath Room Furniture.

Henry C. Meyer, New York, Murdoch Patent Anti-Freezing Hydrant.

St. Louis Stamping Co., St. Louis, Kitchen Ware.

att Philadelphia Soundtone Goods in E. Pratt, Philadelphia, Soapstone Goods, including Stoves, Sinks, etc.

Manning, Bowman & Co., West Meriden,
Conn., Tea and Coffee Pots and Urns.
Holmes, Booth & Hayden, Waterbury, Conn.,
Kerosene Old Burners, Lamps, etc.
Moorehead Clay Works, Philadelphia, Drain
and Sewer Pipe.
Keen & Hagerty, Baltimore, Hagerty's Patent
Street Lamp.

Street Lamp.
White Mig. Co., Bridgeport, Conn., Carriage
Lamps, Dash Lamps, etc.
Excelsior Lantern Co., or Miller & Eastmead, New York, Lanterns. Grann XV.

Hart, Bliven and Mead Mfg. Co., New York, Building and Household Hardware and Fur-niture Trimmings. Lloyd, Supplee & Walton, Philadelphia, Screw and Spring Padlocks, Hollow Augers, etc. The Branford Lock Works, Branford, Conn., Rim and Mortise Locks, Latches, Door Knobs, etc.

Knobs, etc.
The Langdon Miter Box Co., Miller's Falls,
Mass., Mater Boxes with Fixed Saws.
The Davis Level and Tool Co., Springfield,

Mass., Levels, Plumbs, etc.
Snell Mfg. Co., Fiskdale, Mass., Augers, Augerbits, Boring Machines.
Dewitt, Morrison & Kelly, Philadelphia, Augers, Auger-bits, Flour Tryers, etc.
D. K. Miller & Co., Philadelphia, Self-Locking

Padlocks.

Sandusky Tool Co., Sandusky, O., Carpenters',
Joiners' and Wood Turners' Tools, etc.

Biake Bros. Hardware Co., New Haven, Conn.,
Butts, Door Handles, Pulleys, Castors, etc.

Sigle Square Mgc. Co., South Shaftsbury, Vt.,
Steel Framing Squares.

Towards Falls.

Steel Squares, Rules, etc. John Russell Cutlery Co., Turner's Falls, Mass., Table Cutlery, Butcher, Hunting and Painters' Knives.

D. R. Barton Tool Co., Rochester, N. Y., Chisels, Draw Knives, Axes, Hatchets, etc.

CENTENNIAL AWARDS. Pennsylvania Lead Co., Pittsburgh, Refined Actien-Gesellschaft Charlossenhuste, Germany, H. W. Johns, New York, Asbestos Fiber and Lead. Hotchkiss' Sons, Bridgeport, Conn., Curry Niederscheiden, Spiegeleisen.

Sets, etc. aylord Mfg. Co., Chicopee, Mass., Cabinet, Till and Chest Locks. fallory, Wheeler & Co., New Haven, Conn., Rim and Mortise Locks, Latches, Padiocks, n Mfg. Co., New Britain, Conn., Butt. bb T. Pugh, Philadelphia, Augers, Bits, Flour

Aurison & Kellogg, Troy, N. Y., Castings of Mallcable Iron and Coacl. Wrenches. tanley Rule and Level Co., New Britain, Conn., Rules, Plumbs, Levels, Planes, Plane Irons,

Rules, Plumbs, Levels, Planes, Plane Irons, etc.
deorge Selsor & Co., Philadelphia, Hammers, Hatchets, Hand Saws, Coffee Mills, etc.
straley Works, New Britain, Conn., Cast Butts, Hoop and T-Hinges and Wrought Hinges, etc.
deonard, Balley & Co., Hartford, Iron Planes, Try Squares and Bevels.

At F. Corbin, New Britain, Conn., Rim and Mortise Locks, Brass and Iron Hinges, etc.
United States Shear Co., West Meriden, Conn., Cast Steel Seissors and Shears.
Miller Brothers Cutlery Co., West Meriden, Conn., Pocket Knives.
Norwalk Lock Co., South Norwalk, Conn., Locks, Bolts, Knobs, Window and Door Fittings, etc.

Locks, Bolts, Knobs, Window and Door Fittings, etc. Henry Seymour & Co., New York, Malleable

Shears and Scissors (steel lined.)

W. Crossman & Son, West Warren, Mass.,
Chisels and Draw Knives, etc.

Chisels and Draw Knives, etc.
Douglass Axe Mfg. Co., East Douglass, Mass.,
Axes, Hatchets, Picks, Adzes, etc.
Yerkes & Plumb, Philadelphia, Hand Axes,
Hatchets, Cleavers and Hammers.
Klein, Logan & Co., Pittsburgb, Picks, Mattocks, Stone Hammers and Sledges.
R. Maydole & Co., Norwich, N. Y., Hammers.
Collins & Co., Hartford, Axes, Hatchets, Picks,
Adzes, Wrenches, Cane Knives, etc.
L. Herder & Son, Philadelphia, Malleable Tailors' Scissors.

amson, Goodnow & Co., Sherborne Falls, Mass., Table Cutlery, Cooks' and Butcher Knives.
renton Lock and Hardware Co., Trenton, N. J.

Trentos Lock and Hardware Co., Trenton, N. J., Rim, Mortise, Pad, Till, Car and Safe Locks. Obio Tool Co., Columbus, O., Planes, Bench Screws, Chisels, Draw Knives, etc. Carr, Crawley & Devlin, Philadelphia, Building and Cabinet Hardware, also Castings. Alfred J. Colton, Philadelphia, Planes. Union Steel Screw Co., Cleveland, Wood Screws made from Brass and Steel. William Johnson, Newark, N. J., Carpenters' and Mechanics' Tools, and other Hardware. Josiah King & Son, New York, Planes (of all varieties).

Josiah King & Son, New York, Planes (of all varieties). William Rose, Bro. & Co., Philadelphia, Brick, Plastering and Molders' Trowels. Bailey Tool Co., New York, Iron Planes and Spoke Shavas, etc. Wheeling Hinge Co., Wheeling, W. Va., Wrought Butts, Strap and T Hinges, Hasps,

etc. coville Mfg. Co., Waterbury, Conn., Brass Butts and Hinges, Piano Hinges, Castors, Howard W. Shipley, Philadelphia, Pocket Knives. Middletown Tool Co., Middletown, Conn.,

Middletown Tool Co., Middletown, Conn., Plane Irons.
Plane Irons. Mfg. Co., East Hampton, Conn., Sleigh and Hand Bells, Gongs, etc.
W. E. Barton, East Hampton, Conn., Sleigh and Hand Bells, Gongs, etc.
G. W. Nock (Penn Lock Works), Philadelphia, Padlocks and Car Padlocks.
W. T. & I. Merserenu, New York, Stair Rods, Dog Collars and Muzzles.
American Stair Rod Co., New York, Stair Rods, Fastening Nails, etc.

American Stair Rod Co., New York, Stair Rods, Fastening Nails, etc.
J. L. Mott Iron Works, New York, Fountains, Vases and Statuary.
A. Field & Sons, Taunton, Mass., Tacks and Nails (Iron and Copper).
American Wire and Screw Nail Co., Covington, Ky., Wire and Screw Nails.
J. F. Armbruster, Philadelphia, Casting made from Tin Waste.

J. F. Armoraster, Franqueipina, Caseing many from Tin Waste. Gong Bell Mfg. Co., East Hampton, Conn., Hand Call, Seligh and Gong Bells. W. A. Ives & Co., New Haven, Conn., Braces, Auger Handles, Tap Borers, Au-

gers, etc.
G. Newman, New York, Buckman's Patent Spring Bolts, Automatic Window Locks, etc. M. Gould's Sons, Newark, N. J., Stair Rods, Dog Collars, etc.
H. S. Shepardson & Co., Shelburne Falls, Mass., Gimlet Bits, Reamers, Gardeners' Sets,

Gouges, etc. W. J. Tiebout, New York, Ship Hardware (Brass American Screw Co., Providence, R. J., Iron, Brass and Steel Screws, Carriage and Stove The Meriden Cutlery Co., Meriden, Conn., Ta-

ble Cutlery. R. Heinisch Sons, Newark, N. J., Tailor Shears

(concave ground).
Globe Nail Co., Boston, Horac Globe Nail Co., Boston, Horseshoe Nails.
Buck Bros., Milbury, Mass., Firmer and Socket
Chisels, Plane Irons, Punches, etc.
John Booth & Son, Philadelphia, Braces and
Bits, Spokeshaves, Turnscrews, etc.
P. Loucutrart, Newark, N. J. Calipers, Compass, Hammers, Punches, etc.
Northfield Knife Co., Northfield, Conn., Pocket
Knives.

Knives.
Elmira Nobles Mfg. Co., Elmira, N. Y., Axes
Draw Knives, Augurs, etc.
A. J. Conrad, Fort Washington, Pa., Augers and Bits. J. Wiss, Newark, N. J., Shears, Scissors, Shoe

Knives, Newark, N. J., Shears, Scissors, Saoc Knives, Pruning Shears, etc. Start Lock Works, Philadelphia, Pad and Trunk Locks, Door Springs, etc. Barney & Berry, Springfield, Mass., Skates. Clark's Combination Lock Co., Baltimore, U. S. Sea Padlocks and Safe Deposit Lock Co. Wilson Bohannan, Brooklyn, Pad and Rim Locks.

Locks.
Starr Tool Co., Middletown, Conn., Squares,
Bevels, Calipers, Gauges, Machinists' Tools, etc.
Smith & Egge, Bridgeport, Government Padlocks, Mortise Locks, etc.
D. M. Mecker & Son, Newark, N. J., Maileable Iron and other Castings.
Charles Buck, Milibury, Mass., Firmer Chisels,

D. M. Meeker & Son, Newark, N. J., Malleable Iron and other Castings.
Charles Buck, Milibury, Mass., Firmer Chisels, Gauges, Plane Irons, Draw Knives, etc.
Romer & Co., Newark, N. J., Brass and Iron Padlocks, Rim Locks, etc.
Eagle Lock Co., Terryville, Conn., Till, Cupboard and other Locks.
J. E. Strans & Co., Philadelphia, Gelvanizad.

Steet Squares, Rules, etc.
Benedict & Buruham Mfg. Co., Waterbury,
Coun., Rolled Brass and Copper, Brass and

Copper Wire, Chains, etc. [Continued on page 20.]

Hammond Window Sash Spring.

The Hammond window sash spring is intended to lock and support both upper and lower window sashes, holding them at any desired hight, and securing them when closed. But little labor or expense is required in putting them in. We publish herewith cuts showing the springs and the methods of arranging them so as to hold the window sashes.

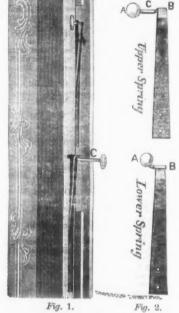


Fig. 1 is a side view of the window frame and spring. Fig. 2 shows upper and lower springs. A is the thumb piece, B the shoulder and C the neck of the spring. The thumb piece of the spring, seen in Fig. 2, is a shell neatly plated and placed upon the neck, which extends nearly The whole is filled with solder, which fills the thumb plece, while making it perfectly secure upon the neck. Fig. 3 shows the upper sash dropped down almost to the lower end of the upper spring. The parting bead is removed to show the position of this spring. A part of the front bead is also removed to show the position of the shoulder

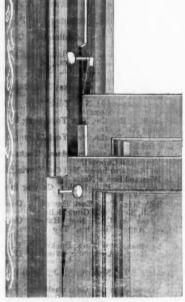
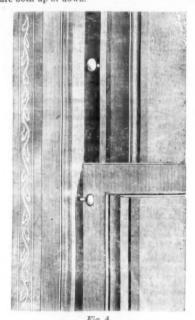


Fig. 3.

of the lower spring and sash when the latter is down and locked. It is to hub axles, together with all sizes from 5-16 to be observed that these springs will hold 6 inches. The workmanship is very fine, and large or small windows, whether made the superior quality of the material is shown by with or without parting beads. The maker specimens submitted to all the usual tests of claims that these springs are made from the bending, &c. This firm, we are informed, prebest materials, are warranted not to break or pare all their own materials at their works in loose their elasticity, and if properly adjusted Auburn, and turn out about 100,000 sets of will work satisfactorily as long as a house lasts. axles annually. They are very much cheaper than sash weights. The first notch in the sash is to raise or lower the sash about two inches for ventilating pur- of carriage hardware, and exhibit complete sets poses in winter; other notches are placed so as of iron for every part of a top buggy or phaeton, stand opposite to each other, whether sashes are both up or down.



removal of sashes for the purpose of cleaning

pressed back with the left hand leaving the description of spring is shown, from the one right free to raise or lower the sash. They are made in several sizes, to adapt them to windows of all dimensions. To protect the notches from wear, a source of frequent trouble with ordinary sash springs, wrought iron points are provided, one of which is driven into each notch so as to save the wood from wear. The address of the manufacturer is W. S. Hammond, at Lewisberry, York county, Pa.

Hardware at the Centennial.

THE COLEMAN EAGLE BOLT WORKS (Welsh & Lea), Philadelphia. This firm have two separate displays of carriage bolts, one in the Main Building adjoining the exhibits of galvanized iron, the other in the Annex to the Main Building, where most of the carriages and carriage furnishings may be found. There is no special beauty in a single carriage bolt, but this firm have succeeded admirably in making a most attractive display of their goods, by grouping them together, so as to form circles, curves, name of the firm, dates and other appropriate designs. Both displays are excellent, and deserve the attention of the trade. The bolts appear to be very smooth and uniform, and well finished. The material used is the best Swedish or Norway iron, the quality of which is shown by bends, twists, curves, &c.

prominent among whom we may mention THOS. SHIELDS, 2224 Pennsylvania avenue, Philadelphia, who has a very handsome display, the arrangement of which is exceedingly artistic and effective and the specimens of bolts shown will bear

There are displays by other manufacturers,

comparison with any in the building. WM. SHEILDS AND THOS. SKELLY, Philadelphia, also have each fine exhibits of a similar character to the above, and as they all adjoin each other we have no doubt the trade will give them a critical examination.

ADVENA & HEALD. Philadelphia, display a large number of axles and axle boxes. The collar forgings range from % up to 3 inches, all forged solid, and are splendidly fluished. The steel boxes are well made and adapted for both light and heavy work, combining strength with lightness, and admirably adapted to the hubs now so generally used. The excellence and uniformity of the material, as well as the splendid workmanship and fine finish, are specially noteworthy features in this exhibit. The arrangement of the exhibits is also very effective, and cannot fail to attract attention and favorable comment.

S. ROGERS & CO., Staufordville, N. Y. This firm make a haudsome display of axles, for which they claim some special excellence on account of their using only selected scrap and hammered iron, using no rolls, which they say has a tendency to make iron limber, while hammering stiffens and improves its quality, as well as making it tougher and stronger. They also display a new style of axle, known as the "ribbed" or 'flanged," which, it is said, can be made lighter and stiffer than ordinary axles, and the wooder bed be so fitted to it that it makes a fine finish and does not work loose. Their composition boxes, made of copper and tin, are also a prominent feature of the exhibit, which is a very creditable one throughout.

SHELDON & CO.,

Auburn, N. Y. This firm make a particularly fine display of their specialties, the arrangement of which, taken in connection with the elaborate show cases made of various colored costly woods, produces an excellent effect. This firm manufacture the well known "anchor" brand of axles, and the display includes a full line of styles; plain and swelled, taper and half patent, mail and Collinge, common Concord and iron

HATDEN & SMITH.

Auburn, N. Y., make a very handsome display including the small clips and clip vokes, braces joints, shifting rails, &c. The workmanship and material is of the very finest, and the exhibit is, in every respect, first-class, and worthy of a careful examination by the trade.

BENEZET & CO. Philadelphia. The display of carriage springs made by this firm is very attractive, and elicits favorable comments from visitors. Their specialty is in carriage springs, and their exhibit includes a full line of the various sizes and varieties. This firm have adapted the patent Caffrey attachment to coach spring work, which, it is claimed, will be an important improvement. It consists of an anti-friction brass bushing, with square bolt, which enables it to vibrate freely, with smooth motion, and it is quite noiseless. They also claim some special merits for their improvements on plat form, wagon and truck springs. The plates are ribbed, which prevents the shifting which is liable to occur with the old style of slot and nib, as the nib in heavy wagons will wear off and allow the plates to shift. They also dispense with the center bolt by a neat clip, which prevents the plates from shifting end or side-

WILLIAM & HARVEY ROWLAND,

Philadelphia. This firm, as might be expected from their experience of 35 years and extensive connection in the trade, make a magnificent display of their specialties, including various Fig. 4. descriptions of Swedish tire, toe, blister and springs occasion no inconvenience in the spring steel. The display of elliptic, platform and C springs is specially fine, and will more or painting. Fig. 4 shows both sashes closed than maintain their well known reputation as and locked. In this position the thumb piece is manufacturers of this class of goods. Every

and when the

man buggy to the heaviest locomotive spring. The material used by this firm is Swedish iron exclusively, and an examination of the exhibits will show that for workmanship and finish they cannot be excelled.

Shortest Line Across the Isthmus. Rear-Admiral Cochrane has written to the London Standard suggesting that it would be to the interest of England if steps were taken for surveying a route for a canal which is traced by proceeding up the Bayano River, which debouches into the Pacific about 20 miles to the eastward of Panama, to a farm or village called Jesus Maria: from thence, in a more or less direct line, to proceed to the harbor of San Blas, on the Atlantic. 'The map, "Selfridge's," and Admiralty Chart, demonstrates at a glance the advantages of adopting this route on account of its sportness, if it is found on survey to be otherwise suitable. The course he recommends for survey is the shortest across the Isthmus of Panama-viz., about 29 miles. He states that he ascended the Bayano River in May last, with two steam pinnaces, to Jesus Maria, in 31/4 hours of steaming, and carried a depth, except ing over some sand bars, of several fathoms. There he caused to be obtained observations for Bridge, at their office 21 Water St , Brooklyn, N. Y., latitude and longitude, which showed that he for the manufacture and delivery of 3400 net tons of No. 8 Galvanized Steel Cable Wire, to be used in had attained within 19 miles, in a direct line, of the port of San Blas, on the Atlantic, and the the construction of the main cables of the East tidal rise of the Pacific extended several miles River Suspension Bridge.

Printed specifications containing full information beyond the point attained by him.

Special Notices. ASSIGNEE'S SALE

HARDWARE, CUTLERY and GUNS. BISSELL, WELLES & MILLET, Auctioneers,

Will sell at Auction on Friday and Saturday, Sept. 29th and 30th, at 10% a. m., by order of Isaias MEYER, Esq., Assignee, the entire stock of

Hardware, Cutlery & Guns

Messrs, MEYER & KASTER,

at No. 129 Duane Street, New York. This stock is valued at over \$25,000, and comprises a large line of Table Cutlery, Eng. and Wostenholm's Pocket Cutlery, Wade & Butcher's, Rodgers' and Wostenholm's Razors, large stock of fine Scissors, Butcher and Bewie Knives.

Also Powder Flasks, Gun Material, Pistols, 500 Double Shot and Breech Loading Guns. Also American and English Shelf Hardware, Pad

locks, German Halter and Coil Chain, Hand, Panel and Back Saws, &c., &c. Also Samples, Desks, Show Cases, &c.

This sale will be worthy the attention of the

Catalogues ready morning of sale. Terms of sale, cash

BISSELL. WELLES & MILLET, Auctioneers, 15 Murray Street, N. Y.

AUSTRALIA.

A GENCIES.—B. O. HOLTERMANN, of B. O. H. & Co., Sydney, Australia, will undertake Agencies on reasonable terms for the Australian colonies, Undeniable references. Communications up to October 12 may be addressed to him at the Ashland House, 4th Avenue and 24th Stfeet, New York; or pto October 5 to Mr. Wilmot, 855 Broad Street, Philadeiphia.

The "Common Sense" Hay Cutters. "VICTOR" CORN SHELLERS, And "PRIZE" CHURN are the best.

A. B. COHU, Manufacturer, 197 Water St., one door from Fulton, New York. "Everything for the Farm," containing illus-trations of 200 of most improved Implements for Farm, sent on receipt of NC.

Wanted, Light T Rail.

Parties having for sale 50 to 100 tons of slightly vorn, 25 to 35 lbs. T Rail, can find a purchaser at a postage to the United States. easonable price, by addressing (with price delivered in New York or Philadelphia.)

SPECIAL NOTICE

D. G. AMBLER, Utien, N. Y.

MEN'S SINGLE GUNS. in addition to the former line of A. Simon's, Liege,

SILESIAN SHEET ZINC.

LOUIS WINDMULLER & ROELKER, 20 Reade Street, N. Y.

Specialties of Wrought, Cast, or Sheet Iron or Brass.

Made to order in a SUPERIOR MANNER, AT LOW CORRUGATED METAL CO., East Berlin, Conn.

WANTED, FILE PACKER.

One who understands his business thoroughly.

Address Office of The Iron Age, 10 Warren St., N. Y.

The American Mining Board Will hold its

First Session for the Calling of Stocks,

On Monday, Oct. 2, at 11 o'clock.

The list will embrace the more prominent San Francisco shares, as well as the securities of all duly proved Minior, Petroleum, Manufacturing and harrying Companies. Applications for member-hip, or for placing securities on the regular list aux be made at the temporary offices in the Drexel

sulp, or made at the temporary of many be made at the temporary many be made at the temporary whose nomination Candidates for membership whose nomination candidates for membership whose nomination of the control of t shall be made prior to October 1 will, which shall be made prior to October 1 will, which cleected, come in as Proprietary Members. Nominations received after that date will be for Operating

WILLIAM WARD, President.

WANTED.—A first-class business man familiar with machinery and manufacturing, caps-of handling large bodies of men, desires a respon-e position. References satisfactory. Address, IRON AND STEEL.

Care of P. O. Box 813, Bridgeport, Conn.

Special Notices.

Respectfully,

TO LET. A Light, Handsome Office.

Possession Immediately.

HERMANN BOKER & CO., 101 Duane Street. N. Y.

DAVID W. POND.

Proposals will be received up to December 1st

876, by the Trustees of the New York and Brooklyn

will be furnished apon application to this office.

W. A. ROEBLING, Chief Engineer.

SECOND-HAND

Machine Tools.

GEORGE PLACE.

ALLIS, BULLARD & CO. (Limited),

Railway Supplies, Machinery & Metals,

14 Dey Street, New York,

Offer for immediate delivery the following list of Tools and Machinery, viz:
One 13 x 36 inch Greene Cut-off Engine, in perfect order; one Brown & Sharpe Universal Milling Machine; one do. No. 1 Screw Machine with lot of Tools; one 8 inch Pratt & Whitney Shaper; one do. 16 inch Planer, and 13 inch x 4 feet Lathe; one Pond Planer, 23 x 5 ft.; two Fowler Presses, one 800 lb. Merrill Drop, and lot 15 and 18 inch Lathes; all in excellent condition.

SPECIAL NOTICE.

Having established ourselves in business in this city for the sale of

AMERICAN HARDWARE, HOUSE-

FURNISHING GOODS, AGRICUL-TURAL IMPLEMENTS, Etc.,

we beg to solicit correspondence with parties desir ous of being represented by us in Germany and sur rounding countries.

House in N. Y., A. HAMMACHER & Co., 209 Bowery.

MANUFACTURERS

desirous of introducing their goods to the British

and Continental Markets, are advised to insert advertisements in the newspaper "IRON," pub

lished every Saturday, at 99 Cannon Street,

SCALE: First 3 lines, 3/; every additional line, 10d.

Price, 6d. per Copy, or 30/ per annum, inclusive of

Steel Castings.

Solid and Homogeneous. Guaranteed tensile strength, 25 tons to square inch. An invaluable substitute for expensive forgings, or for Cast Iron requiring great strength. Send for circular and price list to

CHESIER STEEL CASTINGS CO.,

ATTENTION is invited to the fact that

SPECIAL NOTICE.

Wanted-A Partner.

A practical man with means is wanted to join

Briesen's Patent Agency

FOR SECURING INVENTIONS, TRADE

MARKS, &c., IN AMERICA

AND EUROPE,

No. 258 Broadway, New York.

A. V. BRIESEN.

VENTILATING & STEAM HEATING.

A thoroughly competent engineer, with extensive

Office of The Iron Age, 10 Warren St., N. Y.

experience in the above line, desires employment.

CAR WHEEL FOUNDRY,

P. O. Box 134, Selma, Alabama.

tablished. Locality splendid and healthy

practical man who is already well established

Evelina St., Philadelphia, Pa.

HAMBURG, Germany, April, 1876.

HAMMACHER & DELIUS.

NOTICE! POND'S TOOLS FRANKLINITE IRON ORE. The undersigned has assumed the Personal Property, including accounts, finished and unfinished Machinery, good will &c., connected with the manufacture of Machiner's Tools as conducted by Mr. Lucius W. Pond since 1847, and will continue the said business at the old stand, or. Union and Exchange Sts., Worcester, Mass., under the name of DAVID W. POND, Successor to Lucius W. Pond. CARD.—Having assumed the business mentioned above, I solicit Inquiry and Patronage, with guarantee that present standard of Workmanship, and quality of Machinery shall be maintained. A large quantity of New AND SECOND-HAND TOOLS, ALL STYLES AND SIZES, For Sale at Low Prices. Send for list of second-hand tools Store at 98 Liberty St., New York, will be discoutinued from Feb. 1, 1876, and all sales made from manufactory. Respectfully,

The average assay of this ore yields 69.7 oxide fron, 17.05 oxide of manganese, no sulphur or phosphorus. The large percentage of manganese renders this ore valuable for steel making or mixing with other iron ore, 10 to 12 per cent. of this ore used in puddling furnaces cures red short and cold short in the iron; mined at Sterling Hill, Sussex County, New Jersey. Parties wishing to purchase or contract for future delivery of this ore, can address

Pacings. Best Quality Ingot Brass.

Special Notices.

A. PURVES & SON.

Scrap Iron & Metals, Machinery, Tools, Shafting & Pulleys, Steam Englices, Pumps & Bollers, Copper, Brass, Tin, Babbit Metals, Foundry

this ore, can address
DIXSON & TROTTER, 35 Spruce St., N. Y.

20 tons residenm of this ore, after zinc is purnt out

EXPORT TO RUSSIA!

Having established ourselves in this city for the Having established ourselves in this city for the sale of American Machinery, Hardware, Agricultural Implements and Technical Products generally, we beg to solicit correspondence with manufacturers desirous of being represented in Russia. Familiar with the wants of the country, and, as civil engineers, brought in contact with the industrial interests, we are enabled to introduce successfully American products to the trade. Address HARTOCH BROS.

Kasauska 46, St. Petersburg,

Edson's Steam and Pressure Recording Gauge for Steam or Water.

Gauge for Steam or Water.

The inventors of this combined "Pressure Recording Gauge" and "High Pressure Alarm" have, after many years of persistent effort and at great expense, succeeded in perfecting a reliable and accurate instrument for measuring either air, steam or water, when subjected to pressure, and for ending the same by a tracing upon Edson's Patient Logs or "Chartes." No manufacturer or steam user can afford to be without them. Adopted by the United States Centennial Commission for competitive test at the present Exposition, and has also been used by the American Institute for several years past as a standard gauge. To be found at the Centennial Exhibition under D 9, column 67, Machinery Hall. Circulars sent on application to Five 15 in, swing 6 ft. bed Screw Cutting Engine Lathes. One 21 in, swing 8 ft. bed Screw Cutting Engine Lathe. One 14 in. swing 8 ft. bed Screw Cutting Engine Lathe. One 13 in. swing 6 ft. bed, pulley feed Lathe. Six Common Milling Machine. One No. 3 Smith & Garvin Milling Machine. One No. 4 Smith & Garvin Milling Machine. One Profiling Machine. One 1 Spindle Profiling Machine. One No. 3 Brown & Sharpe Screw Machine with chasing bar. Three 4 Spindle Drills. One No. 2 Fowler Press. One 2 in. Boll Cutter. Four No. 1 "Pond" Drills 21 inch swing. One 5 ft. Radial Drill. One 24 in. x5 ft. Planer.

The above tools have been little used, will be sold very low and can be seen at the store of Circulars sent on application to
M. B. EDSON, 91 Liberty Street, N. Y.

WANTED.—The advertiser desires employment, le familiar with the American and Foreign branches of the flardware business, le qualified to perform the duties incident to an agency, local or otherwise, or that of general salesman; has an extended business acquaintance in the West and Southwest. Can furnish the very highest reference. Address, F. GRENVILLE, Office of The Iron Age, 10 Warren St., N. Y.

DROP FORGINGS.

The TRENTON VISE & TOOL WORKS, Trenton, I. J., having increased their facilities, are now able o do all kinds of

Iron and Steel Drop Forgings n quantities to order at reasonable rates

HERMANN BOKER & CO., Proprietors, 101 & 103 Duane St., N. Y.

for Sale, &c.

For Sale.

The entire interest in one of the most salable patented articles in the United States. Also, ma-chnery for manufacturing in large quantities, or will exchange for stock of merchandise in good lo-cation. Satisfactory reasons given for selling. None need apply except those who mean business.

Address, BOX 65,

Lyons, Iowa.

MACHINERY FOR SALE.

One new Tank Locomotive 24 inch gauge, cylin ders 9 inch bore, 12 inch stroke, drivers with steel tires, weight about 6 tons. Also a recond-hand Vertical Engine, 16 inch bore, 16 inch stroke of cylinder, fitted with independent cut-off. All in first-rate order. Address

WARD, STANTON & CO.,

Newburg, N. Y.

For Sale.

Stock of general Hardware business, long estab lished, doing a good business, 140 miles southwest of Cleveland, O., and 110 miles north of Cincinnati, O. For particulars, address,

J. N. A., Box 194, Beliefontaine, 0.

For Sale,

The oldest established Hardware and Stove House in Central Missouri, in a city of 10,000 inhabitants, and doing a thriving business. Reason for selling, sickness in family. For information refer to SARGENT & CO., 37 Chambers St., N. Y.,

ELIAS BIXBY, or address, Box 196, Sedalia P. O.

For Sale!

Goods, were entered according to Act of Congress in the year 1876, in the U. S. Patent Office.

IN ADDITION to Auger Bits, I make a full line of Extension Lip, Car, Machine, Dowel and Hand Rail Bits, also of Boring Machine, Carpenters' and Millwrights Augers. All my goods are solid CAST STEEL, and perfectly made by means of my Patent Machinery. Owing to the death of the senior partner, the surviving partner is desirous of disposing of that part of the business of the firm comprising the Stove and Tin trade. Would dispose of the entire business, including Agricultural Implements, Hardware, Paints, Oils, &c., if desired. Terms easy with good security. L. PEASE & SON.

Hartford, Vermont.

For Sale,

I have three patents for Dies, Machinery, and Tools for making Augers and Bits, each running seventeen years; dated as fellows: Dec. 19, 1865; January 31, 1866, and July 3, 1866. There is a special claim on each of the Dies. All persons infringing on said patents will be held responsible to the extent of the law.

Husseli Jennings.

DEEF RIVER, Conn., Sept. 7, 1874. 30,000 acres of Iron Ore and Timbered Land, large water powers, furnace and forge producing best quality, at good profit and sale. Accessible to Western and Eastern markets. OWNER, In a foundry and machine business, already well es-

271 N. Charles St., Baltimore, Md.



FOR SALE.

FOR SALE.

at 10c. a copy, Weekly Spanish Review and Prices Current. The undersigned is also a Translator from and into the English, Spanish, French and German. Latest Translations made: for the governments of Germany and Spain, Pacific Mail S. S. Co., Walter A. Wood: Morris, Wheeler & Co.; Todd & Rafferty; John T. Dunkin; Fisk & Hatch; R. W. Wilde; Wilson Sewing Machine Co.; J. Hess & Co.; H. Marquardt; M. Echeyerria & Co., and Chas. E. Little, New York: Hocking Valley Mfg. Co.; W. F. Potts, Son & Co., Phila.; Atlantic and Pacific Land Co.; B. E. Flemming, Jersey City; Wilder & Co., Savannah, and the Tanite Co.; Stroudsburg ("Emery Grinder"), Abendroth & Root Mfg. Co., to whom he refers. Abendroin & Root Mig. Co., to whom he refers.

The Estimates furnished of translations and setting up of Spanish, German and Freuch Catalogues for the Centennial.

c. KIRCHHOFF, Metal Reporter of "The Iron Age," Box 3091 New York,P. O.

Trade Report.

Office of The Iron Age, Wednesday Evening, Sept. 27, 1876. During the past week there have been many gratifying indications of continued improvement in general trade, and reports from all parts of the country are entirely satisfactory as showing that the revival is by no means local in its character. The money market continues easy. The rates to borrowers on call have been 1¼ @ 2¼ per cent., according to collaterals pledged. The discount rate on prime mercantile paper is 4 @ 6 per cent.

In the gold market there have been no movements of general interest. There has been a good borrowing demand for cash, gold, during the week, and the supply is adequate to the requirements of the market. The following table shows the daily range of the premium:

								I	3	1	£	ig	lest.	Lowes
Thursday							۰					1	10	1093
Friday												1	10%	109
Saturday .														110
Monday														110
Tuesday														110
Wednesda														109

Government bonds have been quiet and strong. The Syndicate continue to receive a good many subscriptions from banks in this country for the 41/2 per cent, bonds. Another call for \$10,000,000 5-20 6 per cents has been issued by the Treasury, making the total amount thus far called \$40,000,000; it is expected that another call for \$10,000,000 will be issued during the coming week, State bonds were strong for Missouri 6s, and others were steady. Railroad bonds have been strong, with an upward tendency. We give below the closing quotations of governments.

In the stock market the feature of interest has been the bear attack upon N. Y. Central, which was terminated by a card from Mr. W. H. Vanderbilt, vice-president, which makes a satisfactory showing as to the financial condition of the road. Coal stocks have not experienced any improvement. The market has been in the main weak. The principal transactions have been in N. J. Central, Lake Shore, D., L. and W., Western Union, N. Y. Central, Michigan Central, Milwaukee and St. Paul and Northwest. We give below the prices of active shares at the close of business to day.

The bank statement rendered on Saturday shows a decrease in the total reserve of \$5.059. 700, and in the surplus reserve of \$4,419,025. The reduction in the reserve was due, so far as loss in specie is concerned, to payments into the Treasury by the Syndicate for 41/2 per cent. bonds; and, so far as the loss in legal tenders is concerned, to the beginning of the usual autumn outflow of currency to the South and West. The following is a comparison of the gog for the nest two weeks

Dank averages for our	o base one t	TOCKS .
Sept. 16.	Sept. 28.	Differences.
Loans\$260,630,500	261,842,000	Inc., \$1,211,500
Specie 22,404,200	18,397,700	Dec. 3,506,500
Legal tend's, 59,223,100	57,669.900	Dec., 1,553,200
Deposits 231,193,100	231,635,400	Dec., 2,562,700
Circulation, 14,435,000	14,374,800	Inc., 60,200

The following tables show the movements in foreign trade for the week :

IMPORTS

For the week ended Sept. 23. 1874. 1875. 1876. Total for week.. \$7,503,092 \$6,292,249 \$0,365,551 Prev. reported...295,437,515 \$251,630,387 \$209,005,477

Since Jan. 1.....\$332,940,607 257,922,636 215,371,028 Among the imports of general merchandise were articles valued as follows:

Quant.	Value.
Anvila1	\$47
Brass goods6	794
Bismuth4	1,533
Bronzes23	5,283
Chains and anchors31	1,479
Catlery85	38,658
Gune6	1.437
Hardware5	292
Iron, pig, tons808	15,141
Iron, sheet, tons	. 7,430
Iron cotton ties787	1,084
Iron tubes	132
fron, other, tons82	5,885
Lead, pigs	10,221
Metal goods440	18,475
Nails 4	210
Needles23	8,392
Nickel1	213
Old metal	5,202
Per. caps	3,148
Saddlery4	1.005
Steel	11,148
Silverware	695
Tip, boxes20,021	110,814
Tin, 1,816 slabs	13,017
Wire	2,646
Zinc, lbs83,322	5,040
EXPORTS EXCLUSIVE OF SPECIE.	
For the week ended Sept. 26:	

Total for week...\$5,278,759 4,100.294
Prev. reported... 212,718,745 181,909,202

S nce Jan	1\$217,992,504	186,009,496	197,579,694
	EXPORTS OF	SPECIE.	
For the	week ended Ser	ot. 23:	
	reported		
	Jan. 1, 1876		
	in 1875		
	in 1874in 1873		
	in 1872		

Government bonds at the close were quoted as follows:

В	id. Asked
U. S. Currency 6s	614 1263
U. S. 6s 1881, reg 11	
U. S. 6s. 1881, con	
U. S. 5-20 1865, reg	
U. S. 5-20 1865, cou	
U. S. 5-20 1865, new reg	
U. S. 5-20 1865, con	334 1133
U. S. 5-20 1867, reg	636 1163
U. S. 5-20 1867, coa	634 1163
U. S. 5-20 1868, reg11:	834 1183
U. S. 5-20 1868, cou	834 1183
U. S. 10-40 reg11	436 1143
U. S. 10-40 cou	5% 1159
U. S. 5s. 1881, reg	
U. S. 5s, 1881, cou11	4% 1143
U. S. 436811	
The following are the closing q	
active shares :	
ACRES TO STATE OF THE STATE OF	id. Asked

C. C. Spanishing	
The following are the closing quota	tions o
active shares :	
Bid.	Asked
Atlantic & Pacific R. R. Preferred 2	2
Atlantic and Pacific Telegraph 15%	16.
Chicago & Northwestern 82%	-
" Pref 5814	583
Chicago, Rock Island and Pacific 108%	103
Chic., Bur. & Quincy	115
Col., Chic. & Ind. Cent 334	4
Clar Col Cin and Indula 2517	99

A	
Cleveland and Pitteburgh 87	87
Thiografe Alton 9712	96
Thiongo and Alton Preferred 108	00
Chicago & Alton	74
Delaware & Hudson Canal 66%	66
Adams Express	107
American Express 59	59
United States Express 61%	68
Wells, Fargo & Co. Express 79%	89
Erie 10	10
Harlem131%	133
Hannibal & St. Joseph 13	13
" Pref 22	25
Illinois Central	84
Kansas Pacific 3	-
Kansas & Texas 734	5
Lake Shore 52%	46
Michigan Central	9
Morris & Essex	39
Pref	6
Mariposa	
Pref4	
New York Central 97%	9
New Jersey Central	2
Ohio & Mississippi	2
Pacific Mail	9
Panama	13
Pittsburgh & Fort Wayne100	10
Pacific of Missourt 8	
St. L., Kan, City Northern 5	
FIUL 40	2
Tol., Wabash & Western 4%	
Union Pacific	6
Western Union Telegraph 69%	6
-	

GENERAL HARDWARE.

Trade in seasonable goods is steadily increas ing in volume, and some of our city houses have all the business they can well attend to. Prices are remarkably steady, and the few changes which have occurred during the week are of secondary importance,

The Russell & Erwin Mfg. Co. have increased their production of Screws, and accumulated a fair stock of the regular sizes. They inform us that they are prepared to fill orders of reasonable size. They still adhere to the terms of their circular of August 15th, both as regards price and manner of filling orders.

In Foreign Hardware we notice increased ac tivity and steady values. Peter A. Frasse & Co., No. 95 Fulton street, have in stock a full assortment of Stubs' Files, which they offer to the trade at lowest market rates. They are also sole agents for Thos. Turner & Co.'s (Sheffield) Iron, Steel Faced... Files and Horse Rasps, which they quote from stock at \$4.50 to £, gold, for Files, and \$5 to £, for Rasps. P. F. & Co. also make a specialty of fine tools for machinists' use, Stubs' Steel Wire, &c. The house of Peter A. Frasse & Co. has attained a ripe old age, being established by the father of the present senior member of the firm in 1816, at which time, although it did not occupy the same building in which the firm do business at present, toccupied precisely the same ground.

The demand for Nails, though not so brisk as in former years, is fair, and orders are coming in freely. The stocks in this city and Per doz. \$8.00 \$8.50 at the mills are lighter than is usual at this season, and, as a rule, the assortments are broken. The quantity sold so far this month is equal to the amount sold for the same time in September, 1875. The price continues firm at \$3 per keg for 10d. for lots of 200 kegs and over, and \$3.10 for lots under 200 kegs.

J. Clark Wilson & Co. have issued the following price list for Eastern Pattern Cow Ties, under date of 25th inst. They say of these

goods:

These Cow Ties have been expressly made for the Eastern trade, and with special view to security. An extension or knob has been formed on the open ring to prevent the same from drawing through the loop. This drawing through and closing up of the ring upon the stanchion is a fault which has been much complained of by the farmers, and has never before been obviated. The swivel also connects with the loop without any intervening link thus the loop without any intervening link, thus greatly decreasing the danger of the animal getting his foot over it. The spring hook being make of malleable irou, is less liable to be straightened out than if made of wrought iron.

EASTERN PATTERN COW TIES. Price List in Gold.

With Snap. Per doz.....\$2.80, 3.25, 3.75, 4.25, 3, 10, 6. 3\(\frac{1}{2}\), 10, 5. 4, 10, 4. 4\(\frac{1}{2}\), 10, 3. With Toggle. Per doz.....\$2.40, 2.75, 3.25, 3.81, 3, 10, 6, 3,4, 10, 5, 4, 10, 4, 4,4, 10, 3,

Ward B. Snyder, manufacturer of the Little Giant Steam Engine, has moved to his new store, No. 94 Fulton street, N. Y., where he has also a fine stock of sporting goods.

The Russell & Erwin Mfg. Co. quote Champion Cross-cut Saws at 65 cents per foot, discount 30 per cent., and Tucker's Alarm unscount 30 per cent., and Tucker's Alarm
Tills No. 1, discount 33½ per cent.

We published last week an article illustrating
Mrs. Susan R. Knox's Improved Fluting MaSolid Steel, polished, 5 to 9 lbs...

Bolid Steel, polished, 5 to 9 lbs... Tills No. 1, discount 331/2 per cent.

chine, the list for which is for 6 inch \$5:20 dis count 20 and 10 per cent., instead of \$4.15, with same discount, as printed. Sargeut & Co. are the agents for this machine.

The Middletown Tool Company and W. & E. T. Fitch have issued the following revised price list and terms for Henshaw's Patent Harness Snaps:

REDUCTION IN PRICE OF HENSHAW'S PATENT

HARNESS SNAPS. MIDDLETOWN, CONN., Sept. 22, 1876.
Hereafter, or until further notice, our discount from list of Henshaw's or Bristol's Patent Harness Snaps, respectively, will be 59 per cent., net cash. The only change in our list is an advance of \$1 per gross on 1½ inch, which makes the present list price \$14. Please note this change and favor us with your orders.

MIDDLETOWN TOOL COMPANY,
W. & E. T. FITCH.

Henshaw's Patent Harness Snaps % in., % in., 1 in. 1% in % m., Round Eye. 1% in. 1% in. 1% in. 2% in., Round Eye.

agents for the Otsego Fork Mills, of Girard, Fittings, Iron and Brass Valves, and Steam Fit- cable Pa., manufacturers of Hay, Manure and Spading Forks, Rakes, and other agricultural tools. The goods are handsomely finished, and will E. S. & J. Torrey have disposed of the compare favorably with any similar line in the Weather Strip branch of their business to S. store or factory at lowest factory rates. We of these goods at their old stand, No. 166 Ful- ufacturers being averse to laying in a supply, mentioned some time ago that Graham & ton street. E. S. Torrey will continue the even at this reasonable rate, they have fixed ton. This we think rather large, but the ad-Haines had been appointed sole agents for manufacture of Door Springs and Ice Cream upon 61/2c., currency, as being the highest they vance has been perceptible, and the market Kloman, Park & Co., of Pittsburgh, Pa. They Freezers at 195 Fulton street.

have issued the following net price list for their Iron City Tool Works-Kloman, Park & Co. Solid Box Vises.

\$5 to 130 lbs. ... \$0.13% | Above 140 lbs.... \$0.14% Boxes and Screws. 50 to 60 70 lb. Vise..... Smith Sledges. Steel Face and Penc, 6 to 25 lbs.

Ex. Cast Steel Penc, Polished, 6 to 15 lbs.
Solid Polished, all bright.
Bil Black, polished Face.
half Bright.

Smith Hand Hammers, 2 to 5 lbs., Steel Face and Pene..... Steel Face and Pene, extra finish... Solid Steel, Black, 2 to 5 lbs...... Bright, 2 to 5 lbs..... Engineer Sledges. Cast Steel, Plated, 6 to 95 lbs. above 25 to 30 lbs. Solid, Polished, bright half bright ... Black.....Stone Sledges. Striking Sledges. Stone Cutters' Tools.

Mason Hammers.

C. S. Head and Russ.

Ex. C. S. Head and Russ.

Sold Steel, polished

half bright

black.

Double Head, Axe Finish, plugged...

Solid Steel, bright

black.

"black

"colors

"colors Double Edge, Axe Finish C. S. bright Stone Mash Hammers, Solid Cast Steel, polished, half bright. Stone Napping Hammers Solid Cast Steel, polished, half bright. Stone Picks. ong Cutter, Axe Finish Pick Mattocks, " Grub Hoes .- Cast Steel Point, Axe Finish. 8.20 9.00

Per dozen......\$9.00 Drifting Picks.\$13.00 No. 4, 5 lbs...... 13.50 No. 5, 6 lbs......

Poll Picks. Railroad Spike Mauls.

Cold Chisels.

Solid Cast Steel, Plain Head, % and 1 inch... \$0.34

" Mallet " and 1 " ... 37

" Mallet " and 1 " ... 37

" % %, % and up. 45 Mill Picks. Solid Cast Steel, polished...... black....... Coopers' Froes C. S. Edge, polished, 10 to 12 inch. . . per doz. \$9.50 Solid Cast Steel, all bright.....black.... ·37 Iron, Steel Faced. ... Coal Picks. Per doz.
No. 1 No. 2 No. 3
Cast Steel Point, Axe Finish. \$650 700 750

all black. 600 650 700 Solid Cast Steel, 2 to 4 lbs..... ... per lb. \$0.20

Coal Miners' Lamps. Hoover's Lamp Boat Spike Mauls, Axe Finish.....per lb. \$0.21 Solid Cast Steel, ass'd, half polished.... "34

Bellows.
Discount, 25 per cent. off list. Net. logue for 1876 of their different manufactures. It is accompanied by a very convenient pocket must kill the production in Cornwall, which price list, which is fully indexed. Upon the title page we note the fact that this is the fifth edition of the catalogue. In printing, paper, binding and general taste of get up it deserves great praise. It is worthy of note that the engravings are of a character to show just the some time to come." The demand for Tin coints and features of an article which the buyer wishes most to understand-a thing which just at present, and, if anything, the market is is too often neglected in catalogues. The line of goods shown is very large, as may be judged large lines, ordinary brands, as follows: Charfrom the fact that the catalogue contains 300 coal Bright, \$7.121/2 @ \$7.25; ditto Ternes, Graham & Haines have been appointed sole trated we note especially large Iron Pipe and \$5.75. England is strong, both by mail and tings generally, Boiler Makers' and Steam and

Gasfitters' Tools, and Plumbers' Materials.

BRITISH IRON MARKET.

(Specially reported by cable for The Iron Age.) WEDNESDAY, Sept. 27, 1876. Scotch Pig.-The market is active, the demand improving, and prices are advancing. The following are makers' quotations:

Gartsherrie No. 1.
Cottness No. 1.
Glengarnock No. 1.
Eglinton No. 1.

Manufactured Iron and Rails are un-

IRON.

American Pig.-Iron is selling in a small way without any noticeable feature. Prices are the same, and are well maintained. There seems to be a somewhat more hopeful feeling, but it is not based on any change in the conditions of the trade, but caused by the activity of some other branches of trade. There are no sales of importance to report. The Andover Iron Company have blown in one of their three furnaces, and are running on Forge. We quote: No. 1 Foundry, \$22; No. 2 Foundry, \$20; Gray Forge, \$19 @ \$20.

Scotch Pig.—There is no change, and we continue our quotations, viz.: Coltness, \$28.50; Glengarnock, \$27.50; Eglinton, \$26.50.

Rails.-There is no change in prices to note. Recent sales of Steel have reduced the anxiety of producers to sell, while buyers are holding out for lower prices. Old Rails .- There have been no recent

sales, the latest having been at \$20. Scrap .- The market remains as last reported, and we quote Wrought from yard, \$26 @ \$27.

METALS.

Copper .- Sales for the week sum up between 400,000 and 500,000 pounds Lake Superior on the spot and to arrive at 21c. For delivery in October and November 21c. has been bid and refused. Copper is now held at higher prices. Baltimore we nominally quote 21c. Accounts by cable report an advancing market at Loudon, where Chili Bars have risen last week to £71, a 10/improvement, and Best proving slowly. The call from the mills ap-Selected to £77, a rise of £1. Yesterday the Wallaroo auction sale took place there, Cake averaging £77, 10/. On comparing this price White Rags and Grass Rope are in good dewith the value of Best Selected on Saturday last, a species which about corresponds to it, a fresh advance of about £1 is indicated thus far this week. The sale of these 1566 tons will be followed by another January 16, 1877. Mail accounts are to hand from London to the 16th instant, and we extract therefrom the following passage: "The market throughout the week has been firmer for Chili Bars, and sellers have been enabled to effect sales of upward of 1000 tons. In Liverpool the price has been quoted higher than in this market by at least per ton. This can be only explained by the difference in terms to which some London sales have been subject." Accounts from Hamburg are dated 12th instant, when the market remained quite firm, notwithstanding the heavy charters on the West Coast. The report adds that unfortunately the metal trade, in common with all other branches of business, was being influenced all along by the political outlook, especially the Eastern question, and that merchants are compelled to have an eye on these puzzling problems of war or peace continually. Manufactured remains unchanged at 31c. for Sheathing, and 32c. for Bolts and Braziers; Bronze and Yellow Metal Sheathing, 20%c. @

21c.; and Yellow Metal Bolts, 26c. @ 28c Tin .- Straits Tin is reported a trifle firmer, otherwise there is no change; there is very little transpiring in the way of sales. We quote in gold, large lines, as follows: Straits, 17%c.; English Refined, 16%c. @ 16%c.; ditto Com-English Refined, 16%c. (@ 16%c.; ditto Common, 16%c. (@ 16%c.; and Binca, 19%c., asked.
The Netherland Trading Society's auction of nearly 30,000 slabs Banca came off yesterday, and resulted in an average of 42% guilders, which is % guilder below the July auction.
Billiton at present commands nearly as much as Banca, as consumers have got accustomed to it.

Mason John W. & C. Witerone, colis. The London quotation also shows a slight yielding, being £71, 10/ for Stranta while Misc. pkgs., 4 Banca, as consumers have got accustomed to it. The London quotation also shows a slight yielding, being £71. 10/ for Straita, while sliggapore cables \$21 per picul, with an exchange of 4/, which is equal to 17½c, gold, here. Tin at the decline was quite steady at London; the dispatch adds that the shipments in progress this month at Singapore were small for all quarters. We have been shown a private letter from London, dated September 16, vate letter from London, dated September 16, lead of the shipments of all quarters. We have been shown a private letter from London, dated September 16, lead of the shipments of all quarters. We have been shown a private letter from London, dated September 16, lead of the shipments of the vate letter from London, dated September 16, to one of the East India houses here, from which, by permission, we cite the following sensible passage: "Our advices lead us to expect lessened supplies from the Straits as the result of the low prices ruling here, but at present the total supply of Tin is ample for Discount, 25 per cent. off list. Net.

We have received from the McNab & Harlin
Manufacturing Co., of 56 John street, New scale, especially if the Tin Piate trade becomes active again, and it must not be forgotten that current needs. The consumption will no doubt sooner or later anything like present prices still counts for nearly 10,000 tons per annum. We are ctrongly of opinion that our friends who have any interest in Tin should keep well in it just now, £70 being a very low price, and not far from the lowest likely to be reached for Plates being quite limited, very little is done

would be willing to pay at this juncture, seems decidedly stiffer. The revival in busi-

Nothing has as yet been done in this kind of Lead for future delivery. At the prevailing igh prices for bullion no Western smelter can sell without loss at New York below 7c., currency. We nominally quote Foreign 6%c. @ 63/8c., gold. Manufactured continues well sustained at 8%c, for Bar, 9%c, for Pire, and 10c, for Sheet, less the usual discount to the trade. The demand for Shot is fair. Advices from London are dated September 16th, and read as follows: "A further depreciation has taken place in the value of this metal, particularly as regards Spanish Pig. Sellers have lowered their price considerably, but buyers cannot be tempted at present, and the market looks very quiet, with a downward tendency during the ext few weeks.

Spelter and Zinc .- Domestic Spelter havng been offered at 7c., currency, without meeting with a purchaser, some lots of Western have actually been disposed of as low as 6.80c., currency. The market remains flat even at these ruinously low figures. Foreign is utterly paralyzed, and we quote Silesian, nominally, 7c. @ 71/6c., gold. London reports as follows under date 16th instant: "English Spelter continues to be quoted at £23. 10/, net, at Swansea. At auction 100 tons of English Zinc have been old at £27. Silesian Spelter is quoted £23, 15/." From Hamburg, Sept. 12, we have the following: "The Spelter market is remarkably firm, especially for the finer brands, which have een almost sold out." Sheet Zinc .- The market remains quiet at 8%c. @ 8%c., gold, for Mosselmann, and 8%c. @ 9c., currency, for

Antimony .- The demand is light but steady. We quote the metal 15c. @ 1516c., gold.

OLD METALS, PAPER STOCK, &c.

We have no material change to report in the oudition of the Old Metal market since last week. Business in all lines of Old Metals is very trivial. The only stocks which sell are Copper and Lead, and for these full figures are obtained. Old Rags and Paper Stock are impears to be rather more active, but as yet there has been only a slight reduction in stocks. mand, and are firm at quoted rates. We quote the following as the current purchasing rates:

the following as the current purchasing rates:
Old Metals.—Copper, 14c. @ 15c. per lb.;
Yeilow Metal, 10c.; Brass, 9c.; Composition, heavy, 10c. @11c.; Lead, 50ild, 5½c.; Fae Lead, 5c.; Zinc, 4c.; Pewter, No. 1, 13c.; do. No. 2, 8c. @ 10c.: Spelter, 5½c., Wrought Iron, \$21 per ton; Light do., \$13 per ton; Stove Plate, \$8 per ton; Machinery, do., \$10 per ton; Burnt Iron, \$5 per ton.

Rags, &c.—Canvas, Linen, 4½c. @ 5½c.; do. Cotton, No. 1, 5½c.; No. 2, 2½c.; White, No. 1, 5c.; No. 2, 4c.; Colored, do., 2c.; Mixed, Waolen, 2c. @ 3c.; Soft, do., 5c.; Gunny Bagging, 1½c.; Jute Butts, 1½c. @ 2c.; Kentucky Bagging, 3c.; Book Stock, 3c.; No. 1, 4½c.; Waste Paper and Scraps, 1½c.; Kentucky Bale Rope, 4c.; Oakurr Jank, No. 1, 4½ @ 5c.; do. No. 2, 3c.; Tarred Shaking, 1c. @ 1½c.; Grass Rope, 2½c. Rope, 2%c.

IMPORTATIONS.

Of Hardware, Iron, Steel and Metals into the Port of New York, for the week ending September 26, 1876: Hardware.

der.
Spiegel, lots, 1
Sheet, pkgs., 500
Bars, 1150
Scrap, bags, 51
Scrap, cks., 12

Steel.

Metals.

Tin piates, bxs., 1529 Piza D. M.

Scrap, copper, pkgs.,

Althof, Bergmann & Co. Bales, 30 Brown Wm. Grindstones, 29 Order Grindstones, 29
Brown, Shipley & Co.
Gun barrels, cs., 1
Boker Hermann & Co.
Mdsc. pkgs., 15
Craft Geo. T.
Cases, 2 Fleischmann, Sichel & Co.

Brown Wm.
Cases, 19
Naylor & Co.
Tires, cast, 13
Prosecr Thos. & Sons,
Mdse. pkgs., 4
Robbins C. & Son,
Bundles, 287 Cases, 1 Isom H. & D. Bundles, 287 Van Wart & McCoy, Bundles, 173 Woodford W. O. Cases, 35 Barrels, 44 Order Casks, 10 Rods, bdls., 121

Hardware & cutlery, pkgs., 34
Windmuller L. & Roelker Mdse, pkgs., 8
Willach A. & E. Cases, 2
Order. Packages, 15
Grindstones, 10
Brown Bros. & Co.
Brown Br

Scheider Jos. & Co. Tin plates, bxs., 110 Woodward R. W. Scrap, copper, hhds., Master — Scrap, lots, 1
Scrap, bbls, 8
Naylor & Co.
Spiegel, lots, 1
Bare, 7267
Perkins, Livingstone & Fost,
Scran Love Order.
Zinc, rolled, cks., 20
Tin, slabs, 1635
Lead, bars, 1033
Tin plates, bxs., 2478 Scrap, tons, 50

COAL.

The auction Coal sale of vesterday and the one which is to take place to-day naturally a trifle easier. We quote, in gold, per box, have a disturbing influence upon the market, and make it somewhat difficult to say just what is the state of the trade at the present moment. quarto pages. Among the lines of goods illus- \$650; Coke Tin, \$6121/4; and ditto Ternes, The prices obtained yesterday are in advance of those of last week, a fact which shows the market has stiffened somewhat. Last week Lead .- Sales of Common Domestic have stove Coal at the sale brought from \$3.65 to summed up for the week about 75 tons at 6'50c. \$3.75 at Newburgh, and averaged \$3.68 and a @660c., currency, in lots. Some representa- fraction, which with freight would bring the tives of smelting works have solicited offers price to \$3.88. Yesterday the price was from They offer these goods either from Roebuck, who will continue the manufacture for Selected as low as 6%c., currency, but man- \$3.90 to \$4. Many dealers consider that prices show an advance of from 20 to 30 cents per

from manufacturers, which naturally gives intending to purchase going away without buying, because they expected prices to be a contest with each other for the control to slaughter Coal. We confess that, to us, this does not seem very plausible. The amount of Coal reaching tidewater during the week ending the 16th was 89,000 tons less than for the same period last year, and the output for the present year is estimated at 2,000,-000 tons and upward. This state of things. coupled with the fact that the demand for Coal is fair, and by reason of the low prices many individual operators cannot work, does not look as though prices could go below the present

The following table shows the highest and lowest prices obtained at the last three auction

	Augu	st 29.	Ber	ot. 20.	Ser	ot. 27,
St'mb't	82.70	@2.85	\$2.90	@3.02%	\$2.87	@2.95
Grate	2.673	@2.85	5,80	@3.05%	2.973	
Egg	2.77%	@3.80	8.15%	(@		@3.30
Stove	3.22	@3.65	3.65	@3.75	8.90	
Chestnut.	2.70	@3.42	8.14%	(@3.90	9.30	@8.3374

Below we give a table of the average prices at the different sales, for which we are indebted to Mr. Frederick E. Saward: Meranton

	Sept. 27.	Aug. 29.	Sept. 20.
Steamboat	\$8.90	\$2.77%	\$2.93%
Broken	2.97%	2.72%	2.91%
Egg	3.21	2.78	8.13%
Stove	3.97	8.60%	3'64
Chestnut	8 26%	9.77%	8.30
		. 3 3	TTT 14

Freights are somewhat advanced. further quotations until the sales are over. We quote Bituminous Coal as follows :

Cumberland, at Georgetown	\$8.5	0 0	\$3.75
West Virginia, at Baltimore	4.5	(D) (D)	6.00
Kittaning f. o. b., Baltimore	4.5	15 B	4.35
Newburg Orrel, at "		(3)	4:50
Despard, at Baltimore			4.20
Broad Top, at South Amboy		62	4.75
Morrisdale, Wigtons		43	4.75
Cunard		(3)	4.75
at Philadelphia		0	3.90
Consolidation Coal Co. f. o. b., George-		_	
Consolidation Coal Co. f. o. b., Balti-	00	@	3.62
Consolidation Coal Co. f. o. b., Balti-		_	
more	0.0	- 6	8.75
In barges at New York			
Maryland Coal Co. f. o. b., Baltimore	0.0		4.00
Maryland Coal Co. f. o. b., Georgetown		60	3.75

PREIGHTS-PER	TON OF	2240 1	LBS.		lets, \$70
PORTS.	From Elizabethport, Port Johnson, South Amboy, Hoboken & Weehawk'n.	From Philadelphia,	From Baltimore.	From Georgetown.	Man any dec shade r of our and wes well as sible to quotation turers se ever, are
ngnsta, Me		****	\$1.75	****	impossil terial re
mesbury, Mass	#1:00	****	2:00	****	tive, and
ingor, Me	1.00	****	1.80	\$1.50	also, wit
ltimore					
oston, Mass	*90 *70	1.30	1.60	1.50	the fall
Linemant CV	*70	1954	1:40	1:40	loss me

	Fron Joh Ho	Fron	From	Fron
Augusta, Me			\$1.75	
Albany	****		\$1.10	****
Amoshury, Mass		****	0.00	****
Bangor, Mc	\$1.00		5.00	41.00
Bath, Me	1.00	****	1.20	\$1.20
Baltimore	****	1.00	1.00	1.80
Boston, Mass	'90	1.30	1.60	1.50
ridgeport, Ctristol, R. I.	.70	1951	1.40	1.40
stol, R. I.	*85	****		
bridgep't, Mass	1.00			****
by	****	****	1.40	1.00
ton	41.00	****	1.40	1.50
t Cambridge	*1.00	1.00	1:40	1.40
River	.80	1.25	1.40	1.40
kensack	****			****
well, Me	****			****
tford	****		1:00	1.05
oken	'40		1.30	1.25
on	1110		1.20	1.40
y City	'40	0 * * 0	1.30	1.25
Mass	1.10	****	****	
etown	.80			****

ark	****	****	1.20	2111
Bedford	.82	000	1.40	1.40
uryport	1.10		1.65	1.70
laven	'55		1.40	1.40
ondon	.80		1.40	1.40
ort	'85	70	121.	
York	'40	. 40	1.32	1.30
alk	.40		1.40	****
ich	*90		1.45	****
ucket	-90		***	****
delphia	****		.90	****
nd	-99		1.45	1.20
nouth, N. H	1.10	22.04	1.60	1.70
dence	.80	1-25	1.40	1.40
hkeepsie, N. Y	****		****	1.40
cland	190		****	****
ort	****		****	****
**************	****			
Iarbor	1.00		1.00	4.00
m. Mass	1.00		1.60	1.60
bury Pt., Mass	****			****
aford	'65	***	****	45.76
rook	*75			
ington	.80			1.104
ton	* **			****
y	:65			
ren, R. I	.82		1110	1.00
ham			1.45	1.60
mouth				1.65

Harbor Freights, 40 cents.

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, Sept. 26, 1876.

The week again opens with a cheerful tone in many departments of business, but the Iron quote the market dull and weak at \$21.50 to trade does not participate in the movement to \$22 50. any appreciable extent. Compared with the condition of affairs last month, there is certain- in the market at \$19. No sales reported. ly some improvement, but it would not be in accordance with facts to say other than that sympathizing with other branches which are Wrought, \$25 to \$27, and Cast at \$15 to \$18. showing renewed activity. There is a less expectations of a gradual improvement. None 25c, to 35c, discount to buyers of round lots, of our establishments connected with railway the Baldwin Locomotive Works are now finish- to \$7. ing the four thousandth locomotive built by

ness has caused considerable inquiry for Coal paying the admission fee. Speaking of the prices an upward tendency. On the other hand, tinued success, the number of paid admissions we know of dealers who had come to the city last week amounting to more than 545,000, the here, all U. S. currency; Bar, 8%c.; Pipe, 91/c.; greatest number being on Thursday-New York | Sheet, 10c., less 10 per cent. to the trade. day-123,000. The Empire State did nobly, but This action is based upon the theory Penusylvania expects to do much better next that the great companies intend to enter into a contest with each other for the control celebrate the Centennial. The general business in 5 lb. bags, 10%c.; Buckshot in 5 lb. bags, of the market, and to this end mean of the city, wholesale and retail, is fairly satisfactory, although some surprise is expressed 8%c that it is not unusually active with so many visitors in the city. Possibly their coming at this time may have prevented us realizing how dull business would have been but for the Centennial. The number of strangers here exceeds all expectation, but there is room for all, and notwithstanding reports to the contrary, there is no more healthy city in the world at this Paper, 5%c.; Tea Lead, Heavy Paper, 5c.; New time than Philadelphia. Exhibitors ought to Zicc Clippings, 4%c.; Old Sheet Zinc, 4c.; be on the spot themselves, or be properly represented, in order to reap the advantages of Brass Turnings, 10c. to 11c.; Plumbers' Lead fered during the remaining few weeks that the Exhibition will remain open.

Pig Iron .- There has been only the usual demand, and sales have been in small lots within the range of our quotations. There is no speculative demand, low as prices are : purchases are confined to meeting immediate requirements, and any attempt to press sales would probably result in breaking the market without finding buyers for quantity. Holders are firm, however, and although lower prices are reported in some cases, standard brands are held as follows: No. 1 Foundry, \$22 to \$22.50; No. 2 do., \$20 to \$21, and Gray Forge, \$19.50 to \$20.

Ores .- Nothing doing ; prices entirely nominal. Buyers could obtain concessions on quotations. Offerings f. o. b. at Richmond, Va., are as follows: Magnetic, \$4; Specular for Bessemer, \$4.50; Selected ditto, 65 to 70 per

Blooms .- There are sellers at the following quotations—market very weak: Charcoal Scrap Blooms, \$47; Charcoal Ore Blooms, \$41 to \$42; Charcoal Billets of superior quality, from \$60 to \$62; and Bars for converting into Steel, made of best Champlain Iron, \$75. Strictly Cold Blast Charcoal Blooms, Hammered, are quoted at \$62 to \$64, with tree sales; and Bil- do.; White and Mottled, \$18 to \$20; Anthra-70 to \$74.

ufactured Iron .- We cannot report cided change; the demand is perhaps a more active, but far below the capacity mills to supply. Prices are unsettled ak, competition from other points (as in the city) is so keen that it is imposo quote definitely, although 2.3c. is the on given for best brands, and manufacay they do not take less. Sales, howe quite of a retail character, and it is ble to place round lots unless at a maeduction. The plate mills are more acd the demand for Sheet Iron is better ith prospects of a fair business during months. The outlook for Bar Iron is less promising, although stocks are said to be very light, but a very moderate consumption would insure a steady business to the mills. We quote: Common, 2.c. to 2.10c., and Best Refined, 2.20c. to 2.30c.

Horseshoe Iron .- The demand is very light and prices are weak. We quote: 11/4 x % to %, \$68 to \$70 per ton.

Rails .- There is an unsettled feeling in regard to Rails, and transactions have covered a wide range of prices. The market closes with a steadier feeling, however, and buyers are said to be in the market for at least 20,000 tons additional. There has been a sale of one lot of 10,000 tons Steel Rails at a very low price (\$50 at the mills, cash), with other small sales up to \$56 at tidewater. The nominal quotations are now about \$54 at mills, but good cash buyers might possibly obtain some concessions. The mills are all well employed, and, we are informed, have contracts on hand to last them until the end of the year. Present prices have been offered and refused for delivery next spring. In Iron Rails some large orders are in the market, and sales, in lots amounting to about 1000 tons in all, have been made at \$40 at mills for extra quality. Cash appears to be required in most instances, and as buyers need a little time, business is in consequence retarded. We quote \$38 to \$40 at mills, with one sale, price. There is a disposition to buy at present rates, and it is probable some large contracts will be closed in course of a few days.

Old Rails .- The market is very dull; no one appears to want any Old Rails, although they are offered at low prices. Odd lots sell at \$22 to \$22.50, but round lots would have to be offered much lower to secure a purchaser. We

Car Wheels-Offered at \$19.50; buyers are Scrap Iron .- The market remains without

important change, and frequent sales are made the Iron trade is still greatly depressed, but within the range of our quotations, viz.:

Nails.-The demand is light, but prices are gloomy feeling, and in some quarters sanguine unchanged, and we quote \$3.25 per keg, with

Tin Plates .- The market is fairly active, supplies are more than half employed-many but prices are somewhat weaker. We quote not more than one-fourth or one-third, and as follows in United States currency these branches include a vast number of con- I. C., 10x14, \$8 to \$8.25; I. X., 10x14, \$10.25 cerns employing in times of ordinary activity to \$10.50; Best Charcoal, leaded, 28x20, \$15 many thousands of hunds, whose welfare to \$15.75; other good brands, \$14.25 to \$14.75; exercises an important influence upon the good fair, \$13.75 to \$14.50; Bright Tin, for general condition of the city trade. In Cans, &c., \$6.50 to \$7.25; good Bright Tin, this connection we are pleased to note that do., \$7 to \$7.871/4; Coke, leaded, 14x20, \$6.50

Lead .- The market is very quiet; we hear them since the foundation of the firm in 1831. of sales of 100 tons Foreign at 6 871/4c., gold. Their employes, to the number of 1200 to 1500, Domestic Common is very dull, and cannot be will celebrate Thursday next, in honor of the quoted over 6.50c. for round lots, although occasion, by a procession and other appropriate small lots have changed hands at 6.75c. to ceremonies in the Centennial grounds, the firm 6.87%. Selected is offered at low figures, and the frequent necessities the dealers have of

Centennial, we have again to chronicle continued success, the number of paid admissions at 6.50c. f. o. b. at St. Louis, equal to 6.85c.

and increasing business in the aggregate, and our merchants and manufacturers generally are feeling better, and are more hopeful of the im-

working double turn. The consumption is large and increasing, and with light stocks and a diminished production the market is firm, escent. of Metallic Iron, \$5. At Cleveland, Lake Superior, \$7; and Republic Mine, \$7.50. factory condition of the market for the products, producers have hopes of better prices before long. No change to make in quotations, from those of last week: Bituminous Coal Smelted-No. 1 Foundry, \$24, 4 mos.; No. 2, \$23; Gray Forge, \$21 to \$22, for neutral to redshort, and \$23 to \$22.50 for red-short to extra cite Mill Irons, \$20 to \$21. Hanging Rock Charcoals unchanged.

Manufactured Iron .- There is a continued steady demand for Hoop and Sheet Iron, as well as most of the leading specialties which nearly all the mills are now making, and these specialties afford a much better margin for profit than the regular sizes, as there is much less competition. In a word, business is even better than it was generally expected it would be a few weeks ago. Orders are coming forward pretty freely, but prices are irregular and unremunerative. This is the chief cause of complaint. Quotations may be given at 2 c. to 2.20c. for Bars. Some manufacturers are refusing to accept less than 2-20c., but we understand there is no difficulty in buying on a 2 c.

Nails.-The market continues active, and prices firm, but unchanged-\$2.75, 60 days, for orders of 200 kegs and upward, and \$2.85 for less than 200 kegs. The Nail trade is in better condition now than it has been for several years, which may be attributed to the good in fluence of the Western Association, which, in addition to regulating the production, has prevented any cutting of prices, and, moreover, it is causing business to be done direct between the manufacturer and jobber.

Horse and Mule Shoes-In fair demand but unchanged. Shoenberger & Co. continue to quote the former at 41/c. cash, and the latter at 536c.

Steel .- Nothing new to record. Business continues fairly active, and there is no cause of complaint, excepting that prices are being cut so close that there is little or no margin for profit for some of the leading sizes.

Scrap Iron-Is more active and in small supply, but the inquiry is chiefly for small lots, and prices, although firmer, remain unchanged. No. 1 Wrought Railroad Scrap is quoted at \$25 to \$26, 4 months. There is a fair demand for Scrap Steel also, but no change in prices.

Window Glass -A new card has adopted by the Western Manufacturers' Association, the most important feature of which is that four qualities are being made and quoted instead of two as heretofore. It was found necessary to make this change in order to meet with competition from other points. Discounts remain unchanged, 40 and 10 per cent. for car load lots, and 40 for smaller lots. Business is generally reported slow.

Coke.-There is no improvement to note, nor is it likely that there will be until after there has been a revival in the Pig Iron trade Prices are unsatisfactory and irregular, quotable at \$2.25 to \$2.50 per ton, delivered free on cars in Pittsburgh.

Petroleum.-The market for both Crude and Refined continues dull, and while there has been no recent change in the latter the raw article is decidedly lower. The Standard Combination, it is said, have shut some of their refineries, and will close others unless there is an improvement in the outlook.

ROSTON.

SEPT. 16.—Fig sells in a quiet way to no inconsiderable aggregate. The improvement in inquiries previously noted has settled into actual business, both buyers and sellers having a more chipper feeling. Prices are very difficult to quote, the value depending almost wholly upon what the buyer can use, so that the heretofore importance of a brand and a price is to a large degree lost. This business occurs wholly in American Irons, Scotch Pig being unsought for at present. Offers of lots to near-by store men, however, may yet lead to transactions. Bur continues selling freely, with just a perceptibly steadher tone to the market, a feature characteristic of short supplies of desirable sizes, and teristic of short supplies of desirable sizes, and

we understand that sales were made last week of 500 tons at 6.75c.; Soft Missouri is offered at 6.50c. f. o. b. at St. Louis, equal to 6.85c. Sheet, 10c., less 10 per cent. to the trade.

Shot.—The demand is fair and prices unterprices to the trade.

Shot.—The demand is fair and prices unterprices of the sales. The demand is fair and prices unterprices of the sales. The figure of the sales to the latter class attract the most interprices of the sales. The figure of the sales to the latter class attract the most interprices. The demand is fair and prices unterprices of the sales to the latter class attract the most interprice. Shot.—The demand is fair and prices unterprices of the sales to the latter class attract the most interprice. Shot.—The demand is fair and prices unterprices of the sales to the latter class attract the most interprice. Shot.—The demand is fair and prices unterprices unterprices of the sales to the latter class attract the most interprice of the sales to the latter class attract the most interprice of the sales to the latter class attract the most interprice of the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices unterprices unterprices and the sales to the latter class attract the most interprice of calers, retailers, blackemiths and machiery and shote. The sales to the latter class attract the most interprices unterprices unterprices and the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices and the sales to the latter class attract the most interprices and the sales to the latter class attract was attact the most interprices. Selling in want of all operates, as machinery and sleigh bottom. Common fron is low at \$40. Steel is selling in an moderate way at steady prices

ST. LOUIS.

Messrs. Spooner & Collins. Iron commission mediate future.

Pig Iron.—There is nothing really new to record; business continues fairly active. The mills are nearly all in operation, some of them the model of the model

as last week:
Mo. Stone Coal, No. 1 F'dry. \$25.00 @ 26.00—4 mos. '' No. 2 F'dry. \$3.00 @ 24.00—4 mos. '' Gray Mill 22.00 @ 23.00—4 mos. '' Charcoal, No. 1 F'dry 23.00 @ 44.00—4 mos.
No. 2 F'dry 22 00 @ 23 00—4 mos. Gray Mill 22 00 @ 23 00—4 mos.
Tenn. Charcoal No. 1 F'dry. 23 00 @ 24 00 4 mos. '' No. 2 F'dry 22 00 @ 23 00 4 mos. '' Gray Mill 21 00 @ 22 00 4 mos.
" Gray Mill 21 00 @ 22 00 4 mos. Tenn. & H. R. Coke Iron No. 1 F'dry 25 00 @ 26 00 4 mos.
Tenn. & H. R. Coke Iron No. 2
Tenn. & H. R. Coke Iron Gray Mill
H. R. Charcoal No. 1 F'dry 25 00 @ 26 00—4 mos. H. R. 41 No. 2 F'dry 24 00 @ 25 00—4 mos. H. R. 44 Gray Mill 24 00 @ 25 00—4 mos.
Massillon Iron. No. 1
Mo. Charcoal Blooms 50 00 @ 60 00—4 mos. " Scrap " 45 00 @ 50 00—4 mos.
Mo. Charcoal Hammered Billets
Assorted Bar Iron
Light Cast " 45 @

LOUISVILLE.

Messrs. GEO. H. HULL & Co., under date of Sept. 25, write us as follows: There have been some changes in price, in consequence of the relative supply and demand of certain grades, and we revise quotations accordingly. The tone of the market is the same as for weeks back. The usual time, 4 mos., is allowed on quotations below:

HOT BLAST CHARCOAL.

86	6 Tildam from Alchama Classic	21.00	-	
**	and Tennessee Ores 1 Mill, from Alabama, Georgia and	20.00	0	21.00
	Tennessee Ores	19 00	0	20.00
	HOT BLAST STONE COAL AND CO	KE.		
No.	1 F'dry, from Hanging Rock Ores.	21.00	0	23.00

	2				30.00 @	21.00
8.6	1 Mill.	4.6	8.6	96	19.00 @	
64	1 F'dry.	from Ali	abama,	Georgia		
	and Ten	nessee Ore			20.00 @	22.00
86	2 F'dry.	from Al	abama,	Georgia		
	and Ten	nessee Ore	8		19.00 @	90.00
8.4	1 Mill, fr	rom Alabai	ma, Geor	gia and	-	
		ee Ores			18.00 @	19.00
No.	1 F dry,	from Miss	souri Ore	8	- 0	-
46	2 "	6.6	4.6		- 0	-
84	1 Mill,	44	**	****	23.00 @	24.00
		COLD BL	AST CHAI	BOOAL.		
Car	Wheel fr	om Hangi	ng Rock	Ores	85.00 @	43.00

Messrs, L. R. HULL & Co., under date of Sept. 23, write us as follows: Pig Inox.—The market has been somewhat quiet after the larger movements accomplished during the past few weeks. The Fannie and Longdale furnaces have both resumed operations. Prices as below remain unchanged. as below remain unchanged.

HOT-BLAST FOU	NDRK.	
Hanging Rock No. 1, Char- coal		94:00 4 mas
Hanging Rock No. 2, Charcoal	22.50 @	23.00-4 mos.
No. 1, Coke No. 2,		24 00—4 mos. 23 00—4 mos.
coal No. 1, Stone-	91:50 @	22.00—4 mos.
Virginia No. 1, Coke	23.00 @	-4 mos.
Ala. and Tenn., No. 1, Charc'l	23.00 @	
Red Short No. 1, Coke		
Fannie U. S. Scotch, No. 1 Alice No. 1	24:50 @	-4 mos.
Southern Ohio Am. Scotch,		-4 mos.
No. 1	55.00 @	-4 mos.

FORGE IRO	N6.
Hanging Rock No. 1, Char-	
coal w ton.	\$21.00 @ 21.50-4 mos.
Hanging Rock No. 1, Coke	21'00 @ -4 mos.
Virginia, No. 1	20.50 @ 21.00-4 mos.
Ala, and Tenn., No. 1, Charc'l	2 1.50 @ 21.00 4 mos.
Red Short, No. 1, Coke	
Cold Short, No. 1, Stone coal	19.00 @ 20.00-4 mos.

CAR WHEEL AND MALLEABLE.

RICHMOND.

Mr. ASA SNYDER, Iron Merchant and Furnace Agent, Richmond, Va., writes as follows under date of Sept. 26: The inquiry for first-class Charcoal Irons continues fair. Sales at quota-

(80	cording	to bran	d)			9.		24.00	0	284
Va. b	ot blast	Coke P	ug Ir	on,	No.	1 6	x.	24.00	0	25.0
5.4	3.6	**	8.6		No.	26	ex.	22:00	60	234
6.6	4.5	6.6	6.0		No.	3 6	ex.	19:00	0	20.0
Virg	nia Ant									
-	46	66	No.	2 e	X			23 00	60	211
	4.6	2.4.						21.00		

CLEVELAND. Messrs. C. E. Bingham & Co., 25 West Main street, under date of Sept. 25, quote the Iron market as follows, 4 mos. time: FOUNDRY IRON.

CAR WHEEL AND MALLEABLE IRON. BESSEMER IRON.

BALTIMORE.

Nos. 1 and 2 Lake Superior Charcoal \$27.00-4 m.

FORGE IRON.

Messrs. R. C. HOFFMAN & Co., Iron and commission merchants, Nos. 23 and 25 South Frederick street, report the Pig Iron market as follows, under date of Sept. 26: The Iron mar-ket continues dull, without change in prices, and we continue last quotations:

Mesers. Wyeth & Brother, Iron and Steel merchants, 46 and 48 South Charles street, report us the following prices under date of Sept. 26: With returning confidence trade signs continue to rule improving, but unaccompanied by any change of values. We quote the market improved with unaltered list.

AMERICAN REFINED BAR IRON.

AMERICAN REFINED BAR IBON.

1 to 6 wide by ½ to 1 thick. 1 2½ to 2 4-10c. 2 b.
1 to 4½ wide by 1½ to 2 thick 1 ... 2½ to 2 4-10c. 2 b.
Round and square, ordinary sizes, from ½ to 2 unclusive ... 2½ to 2 4-10c. 4 Hoop Iron, 1½ wide and upward ... 3½ to 4c. 4 Horse Shoe Iron ½ to 1 wide by ½ to ½ thick ... 3½ to 4c. 4 Norway Nail Rods ... 7 to 7½ c. 4 Horse Shoe Iron ½ to 1 wide by ½ to ½ thick ... 3½ to 10 15½ c. 4 Horse Shoe Iron ½ to 1 wide by ½ to ½ thick ... 3½ to 10 15½ c. 4 Horse Shoe Shoes ... 15 to 15½ c. 4 Machinery Steel. ... 9 to 10c 11c. 2 Hornogeneous Steel. ... 99 to 9½ c. 4 Hornogeneous Steel Plate ... 9½ to 10c. 2 Hornogeneous Steel Plat

CHATTANOOGA.

Mr. S. B. Lowe, under date of Sept. 25, reports as follows: No change can be noticed in prices, but a firmness is manifested in Forge lrous. Prices are about as follows:

	Troub. Tricos are about as tonows.
	COKE.
fef	No. 1 Foundry, extra. \$21:50 @ 32:50
1	HOT BLAST CHARCOAL.
8	No. 1 Foundry \$21.00 @ 22.50 No. 2 Foundry 18.00 @ 19.50 Gray Forge 16.03 @ 17.50 White and Mottled 14.50 @ 15.50
	COLD BLAST CHARCOAL.
000	Car Wheel Metal \$92:56 @ 29:00

FOREIGN.

FRANCE.

of anything, is firmer: the quotation remains: First Brands, Chili Bars, 190 francs; good Current ditto, 187:50; and Lots and Urmeneta, 185. Nothing of special interest has happened at Marseilles, where they quote as heretofore: Red Tokat, 195; small Refined logots, 209; Bolts, 245; Sheathing, 235; and Yellow Metal ditto, 210 to 215, less 3 per cent. for cash. Tha.—The only serious obstacle in the way of a material rise is the unwieldiness of the London stock. The a-surances that Cornwalt is producing less, and the Straits and Australia do not ship as much as they are wont to do, cannot reconcile the metal trade with the heavy supply of available That London. The nevertheless, rather tends unward. Much interest will be felt in the coming Dutch sale. Here the uniform figure of 195 fraces is sustained. Marseilies keeps steady at 195 for Straits and at 195 to 200 for Billiton. Lod.—English has been well supported throughout, but Spanish is ensier. We remain firm here at 54 france; Spanish, at Havre, 54; English, 55%; Soft, 53. Marseilles has not varied from former rates, and still remains inactive. The ccurse of Spelter has been a steadily improving one of late, especially in England. Great firmness is the characteristic of our market, and we quote Silesian, at Havre, one of late, especially in England. Great firmness is the characteristic of our market, and we quote Silesian, deliverable at Havre, at 59 francs, and at Paris, 59'50. Soltsian, at Havre, commands 56'50 to 59. The same inactivity heretofore reported prevails at Marseilles, and prices there remain nominal. Fron.—Although the improvement in France does not amount to much, its existence is clearly percept bie, and certain classes sell more readily than a month ago. English Fig is rising, Luxemburg ditto is well supported, and we are apparently on the eve of better times. Paris in particular presents more encouragement, with much buoyancy in the recommendation of a stout competition from English Coal. Prospects for a good beet root crop are, however, fav

BELGIUM.

(Revue Universalle).

(Revue Universalle).

BRUSSELS, Sept. 10, 1876.—Iron.—The general impression seems to be that the fall campaign upon which we are just entering will bring increased work to our rolling mills and architectural Iron works. There is, indeed, more activity already observable. Orders are arriving thus far, it is true, only by driblets, but, in the aggregate, sufficient to

prevent a cossation of operations and a discharge of hands. Prices are still extremely low, and leave but an insignificant margin to makers. An adjudication took place at London last week upon tenders of Rails for Brazil. There was but one fleigran house handing in fits tenders, and though low, it was underbid by an English firm at a price equal to 135 francs per ton, delivered at London. A German bid of 133 francs per ton, delivered at London. A German bid of 133 francs per ton, delivered at London. A German bid of 133 francs per ton, delivered at London. A German bid of 133 francs per ton, delivered at London. A German bid state of the price of

GERMANY.

(Borsenhalle).

(Borsenhalle).

(Borsenhalle).

Hamburgh, Sept. 9, 1876.—Metals.—There is rather an improved feeling in Metal circles in Germany. Stocks in the interior are represented as being but moderate, while at the ports the accumulation is still comparatively great, especially as regards Tin. As soon as the larger operators can see their way a little clear before them, speculation will take care of at least a portion of these large supplies. We look forward with much hope to the spring trade. It has been often asserted that, in spite of the French indemnity fund, Germany is in reality worse off than before the war, and the majority of people really think that this is the case. But we dispute this fact. A large amount of money collected from France is still in the hands of our government or people, and if in part expended by the former it has been done so in the country and for a good purpose. Copper.—The article is firm without developing much activity; rates are unchanged. Tin is now passing through a period to which attaches much interest. Much will depend upon the result of the Netherland Trading Society's sale on the 26th instant. Meanwhile matters are kept in abeyance here, and we are unaltered. Lead.—It has been difficult of late to uphold the value of Spanish on the Continent, while English has been rather tending noward. The market here remains in a listless stituted, and we have no change to note. Spetter.—There has been no check on the gradually advancing tendency in Europe, and we are slowly creeping up at all points, although not yet quotably higher here.

HOLLAND.

(Koch & Vierboom).

ROTTERDAM, Sept. 10, 1876.—Tin.—The market is weak and prices continue to decline. From 43, Banca has given way to 42% guilders since the beginning of the month, but at the latter price there are buyers. The Trading Company will sell 29,900 slabs on the 30th inst. In Billiton some dealings for delivery in November have occurred at 42. At this figure it may, we believe, be procured on the spot, although not many holders would be willing to submit to a similar concession.

AUSTRALIA.

AUSTRALIA.

(Sydney Morning Herald.)

Sydney, July 31, 1876.—Tin.—In regard to the Tin mines in this part of the country, they are beginning to look very dull, as predicted in one of my former letters. Cope's Creek would be worked out in less than two years; this will be verified from the fact that in six or eight months there will not be a paying mine in all the Creek; indeed, if any Australian floods should come, as they do sometimes, all the workings would be swamped out, and never pay to open again unless Tin is a great deal higher than it is now. There are eight or ten claims working, of which two or three are paying a small profit, and the remainder loosing considerably. Some idea may be formed of the riches of the Creek when I say that 2000 tons of Tin were taken off an area of more than one-half mile 'ong. Middle Creek, from which a great deal of Tin has been taken, is run out, not a man working in it now. Vegetable Creek is also looking very dull, and the returns have fallen off greatly; there are not so many men employed in this Creek by 200 as when I wrote you last. Many of the claims are not paying expenses, and only a few making a profit. A claim which is the richest, and has returned for the last 12 months 50 tons a week, the ground is nearly run out. Another claim, from which 1100 tons were taken from an area not exceeding four acres, is, like the rest, nearly worked out; while the blocks adjoining these rich claims are doing very little.

(Clark, Spence & Co.)

GALLE, Aug. 16, 1876.—Flumbago.—Market weak at the following quotations: £12 to £13, Lumps; £7. 10/ to £8. 10/. Chips; and £4 to £5. Dust. Coal.—No business to report, ships lately arrived having all brought Coal on chartered terms; none on ship's account. For coaling steamers quotations remain as before, 45/; Newcastle, 47/6; Cardiff, free on board into bunkers. £cchange.—Since our last, exchange has taken an upward tendency which still continues. We now quote banks' selling rates, 6 months' sight, at 1/834.

We now quote banks' selling rates, 6 months' sight, at 1/8½.

(Glifillan, Wood & Co.)

Singapore, Aug. 12, 1876.—Tin.—Buyers for Europe have been practically out of the market, owing to the dollar price having been maintained at a higher level than the rates of exchange warrant, mainly by a demand for China, but this now appears satisfied and lower prices may be looked for. To-day's nominal value is \$31, per picul. In Penang there has been a good demand for China, and last price quoted was \$20.90 per picul. Tonnage.—There is no change in the position of the market. The Robert Morrison and Vanora still require cargo for New York, and would probably accept something under 35, for dead weight and 50, for light cargo to secure freight. The steamer Glamis Ca-tle, shortly due from China, en route for New York direct, has encaged a small quantity of Tin at 22 per ton. For Booton there is no vessel loading, the Wennyse Castle having cleared with 349 piculs Tin. Exchange has rapidly advanced here and in China, owing to a great scarcity of dollars, and the banks will hardly name a buying rate. Exports from the Straits to the United States, in the first seven months of 1876, were 28,598 piculs, sgainst 31,660, 23,344, 19,413, 48,853, 30,19 and 36,253 in 1865. 81,660, 23,734, 19,741, 34,853, 30,919 and 36,253 in 1865 to 1870.

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) SHEFFIELD, ENG., Sept. 12, 1876. THE BULGARIAN ATROCITIES

continue to occupy the lion's share of public attention, the whole country being just now one great mass meeting, whereat, in most rapid succession, resolutions are being unanimously adopted declaring that such horrors must no longer exist. In some quarters the British government has been censured, but it appears to have a good defense and has evidently acted with extreme caution. In the meantime the reports from Russia are very warlike, the people in the towns there being reported to be "full of fighting," declaring that the Czar must consent to let them drive the Turks out of Europe. This is exactly where the rub is, and all the difficulty lies in solving the question. As the Marquis of Hartington, however, courageously said to us at the Sheffleld Cutlers' Feast, last Thursday, "the task of a statesman is to over come dangers and encounter difficulties," an assertion which came with good grace from the heir to the dukedom of Devonshire, of Chatsworth and the bead of the great Whig house of Cavendish. On one point, at any rate, both Liberals and Conservatives are in unison, and

Flour Mill Colliery, Forest of Dean, owes £80, 000; at Birmingham, Mr. Frederick Edward Keller, precious stones dealer, owes £45,000; and at Walsall, Mr. Arthur Hills, chemical manufacturer, of Cannock Chase, owes over £60,650. In all these cases petitions for liquidation have been presented to the courts. From Russia we have tidings of two failures, Strubin & Co., Moscow, and Panin & Co., Moscow, which fall heavily at Manchester and Bradford. In the former case, £150,000 falling at Manchester, and £100,000 in the other at Bradford. THE WEEK'S EXPLOSIONS

have again been considerately tender of human life, albeit in at least one instance some maining has resulted. This was at the Skipton (Yorkshire) Gas Works on Monday last, where there was a terrible explosion of retorts whilst the men were cleaning the valves. Two or three men were shockingly burned, and the whole district was shaken in a window-breaking manuer. Then at the Tong Colliery, Bolton, an explosion of fire damp took place, owing to the successful search after the foul gases by a miner named Holt with a naked candle in hund. There were 106 persons in the pit, of which number four were burned and, subsequently, the manager, proprietor and three other persons were rendered unconscious by the after damp. It is currently reported in the district that Holt will not search for fire damp any more by means of the too innocent light of the talhave again been considerately tender of hum that Holt will not search for fire damp any more by means of the too innocent light of the tallow candle. At Plymouth whilst the crew of a gunboat were experimenting with torpedoes, one of these playful explosives hazarded a premature blow up of its own devising, but, although sufficiently noisy and demonstrative, the result was not by any means fatal to the occupants of the many boats then and there abounding, albeit one such boat was upset and its crew ejected. They were, however, all rescued, and thus defeated the torpedo.

OUR FIRES

have been on a small scale this week, perhaps have been on a small scale this week, perhaps because the weather has become very much colder. At Belfast the grain warehouse of Messrs. Hamilton & Co. was partly destroyed, the loss being set down at £10,000. At Mingavie, near Glasgow, the large five story paper works of William White & Son were destroyed, the loss being £35,000 or thereabout.

THE BRITISH ASSOCIATION

is now in annual session at Glasgow, the sitting is now in annual seasion at Glasgow, the sitting altogether extending over about a fortnight. The president is Dr. Andrews, whose address was well received, and is published in full in the Engineer of Saturday, Sept. 9th. You will observe that in the course of his review the Doctor dwells upon the smoke nuisance, and urges that the fuel consumed in almost all manufacturing processes is greatly in advance of the theoretic quantity. of the theoretic quantity.

RAILWAY COLLISIONS

have been unusually plentiful during the past 7 or 8 days. On the Bristol and Exeter line, near Durston, a passenger train attacked a number of stolid coal wagons, with results decidedly inimical to the comfort of the passengers, many of whom were badly cut and bruised. At Shef-feld a train, had, a parrow, escape, overlay to There is no demand here for ordinary merchial to the bady cut and bruised. At Shrife ded a train had a narrow escape, owing to a rail being out during plate laying operations. At Barnsley 12 or 13 goods wagons got loose and raced off down a steep gradient at a speed which cannot civily be described, but they were overreached by the telegraph, and uiter mately turned into a siding, where they fell into the structure of the state of

A YEAR'S RAILWAY SLAUGHTER.

A report for 1875, just issued by Captain Tyler, of the Board of Trade, gives some details in this respect. Of 507,000,000 passengers 1290 were killed and 5735 injured. There were 134 passengers killed and 594 injured by causes beyond their own control. Not fewer than 765 of the killed and 2618 of the wounded were officers and servants of the companies, while 391 killed and 331 injured were suicides, trespassers or those who met with accidents at level crossings. The whole number of British railway employes is estimated to be about 280,000.

SCOTCH PIG IRON

has been thoroughly quiet during the week, prices of all kinds having been steady, although somewhat in favor of larger buyers. There are now \$2,646 tons in Connal's stores, freights

being as heretofore.

James Watson & Co. report: "The market for Scotch pig iron has been very steady during the week, from 55/11 to 56/, cash, and one month fixed, closing rather buyers at 56/, cash. Shipments last week were 9637 tons, against 10,616 tons in the corresponding week of 1875.'

we quote :											
G. M. B., at	Glasgo										No. 3.
Gartsherrie, Coltness,	0.6	0.0								40.00 /	56/
Summerlee,	6.6									40/0 /	54/6
Langloan,	9.6									40.00	55/6
Carnbroe,	61		9.5				2	2.5	8.0	58/6	54/6
Caller, at Po	rt Dund	8.9		0 1		9.9				64/6	85/6
lengarnock Eginton,	, at Arc	OBE	148								56/
Dalmellingto	D. 65				4					P.O	54/6
Snotts, at Le	ith									 65/	56.6
Kinneil at h	lo'uess.									 57/6	53/6

The figures of John E. Swan & Bros. are, in ome cases, sixpence per ton lower than the some cases, sixpence per ton lower than above. CLEVELAND IRON-MASTERS' RETURNS.

The usual monthly statement just issued by the Cleveland Lion-masters' Association shows

to pay up their arrears of subscriptions.

TRADES OF SHEFFIELD.

In one or two branches of trade I think there has been a slight improvement during the week, a number of small orders, for the most part on home account, having contributed in the aggregate to brinking about this most well-come result. It cannot by any means be said that the alteration is a very noticeable one, or that it is likely to be continued in an increasing ratio, yet, under any circumstances, it is better than retrogression or standing still, and, at the lowest estimate of its value, gives more employment for the time being. I hear, for instance, of more business baving accrued at some of the largest manufactories of crucible steel, where not only ordinary castings are made, but where certain sorts of railway materials—such as crossings and switches, &c., are made. There is also a decidedly stronger demand for spring steel. All these improvements of or stable industries has there been a more marked depression than in the ordinary steel trade—a state of things brought about too to only by the dullness of demand, but by the reckless way in which certain "new firms" have been trying to cut down prices.

Of pig iron the sales here in the open market are very few, and in respect of small lots, mostly of foundry iron, or "foreign" parcels for mixing purposes. Some of the local blast furnaces are still out, and from what I hear are likely to remain so for some time to come. Bessemer and ordinary hematite qualities are selling with moderate fredom at about to following nominal rates, which are probably being made somewhat easier to large buyers: Maryport Hematite, No. 1, 70/; No. 2, 67/6; and No. 3, 67/6, Ordinary, No. 3, 67/8, No. 4, 67, 6; and No. 3, 67/6, Ordinary, No. 3, 67/8, No. 4, 67, 6; and No. 3, 67/6, Ordinary, No. 3, 67/8, No. 4, 67, 6; and No. 3, 67/6, Ordinary nominal in price thank from, which are probably being made somewhat easier to large buyers: Maryport Hematite, No. 1, 70/; No. 2, 67/6; and No. 3, 65/7, Milon Bessemer, No. 1, 7

No. 4, 67/6; and No. 5, 67/6, with 23/2 off in all cases for prompt cash.

There is no demand here for ordinary merchant irons, which are purely nominal in price at the lowest quotations known for sometime, and best brands are not sought after except for special engineering or steel melting uses. In consequence of the dullness of the cast steel trade Swedish and Russian irons remain quiet at late nominal flures.

Messrs. Cocker Brothers (limited), merchants and manufacturers of steel, wire, &c., have just paid an interim dividend at the rate of 10 per cent.

There is nothing new to record in connection with the rail, file, edge tool, saw or cuttery trades. The inquiry for armor plates is well maintained, some heavy lots of 22 inch armor maintained, some heavy lots of 22 inch armor for Italy having been sent off during the past week, further plates of the same thickness and other sizes being in course of formation at the Atlas and Cyclops Works for various governments. There is also a steady call for best boiler plates and for good iron and steel ship plates for the use of the Admiralty, and the leading shipyards of the northern rivers.

I hear that the late Mr. George Wostenholm has left a fortune of between £550,000 and £600,000, a large share of which goes to his widow, who was, I may just remark, Mr. Wostenholm's third wife.

BIRMINGHAM AND STAFFORDSHIRE

BIRMINGHAM AND STAFFORDSHIRE.

BIRMINGHAM AND STAFFORDSHIRE.

In the Staffordshire iron trade there is still no improvement worthy of being noted, the demand ruling quiet all round. There is, of course, some little call for nail rods, sheets for stamping and galvanizing purposes, and for hoops, some of the last pricles being for the Southern States of your Union. The hardware industries are in some respects a little better, particularly the jewelry, metallic bedstead, chandelier, lamp and general gas fitting branches in most of which there is generally some little novement at this period of the year.

that there are 113 furnaces in blast and 48 out, the make of pig iron in the district during August having been 171,398 tons, as against 166,241 in August, 1875. The foreign ship ments during the anouth have been 28,215, and coastwise, 33,112 tons, as against 31,013 and 26,301 respectively last year.

UNSUCCESSFUL CO-OPERATIVE MINING.

Several practices are resulting the all-fated ton.

diers have received notice of a reduction from y to 8/3 per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, the ballers being also iowered 3d. and the shinglers 3d. per ton after October 1st, as wet be to continue when the asker of the market; but although the the market; but although the price is assignal illustration was held at Barnsley, and lasted for several hours. The Mailan Journal remarks: "Copper.—Bince the market; but although the price is assignal place in the market; but although the managing also iowered 3d. and the shinglers also the past the fairly firm and steady since I last wrote.

The Mining Journal temarket; but alt

	£	8.	d.	£	8.	d.
Merchant bar	6	12	6 2	6	15	(
Merchant bar, in Wales	6	2	6 60	6	.5	0
Staffordshire	7	5	00	9	15	0
Hoop	8	0	00	9	0	(
Sheet	9	10	00	10	10	(
Nail rod	77	10	00	59	0	- 6
Bar, best crown	7	5	00	8	10	(
Boiler plates	9	15	00	10	10	- (

chinery, put in by the Flanders Pump Co., was tested here a few days since with most satisfactory results. The machinery consists of one large and one small Flanders pump, with a capacity of 2,500,000 gallons per day, and some seven miles of street mains, with hydrants at proper distances. These pumps threw six streams from six different hydrants at the same time, to an average height of 160 feet. At some of the hydrants the streams went up to 175 feet. The pressure on the mains in the test was 185 lbs. to the square inch, and all remained firm. The people are rejoicing at the prospect of an abundance of pure water and safety from fires. What seems particularly interesting in this test is the fact that the same system of pumping water directly into street mains, and regulating pressure by means of a fixed amount of steampower-gauged generally at 45 lbs. to the square inch-or by the same pressure on the water-wheel when that is used, was used by "The Man of Ross," spoken of by Pope in his elegy, in the town of Ross, England, as early as 1750. It is a curious fact, also, and shows that other countries beside our own are troubled with patents, that Joseph Bramah, of London, secured a patent on this same system of pumping water directly into street mains for ordinary bros. are, in wer than the wer than the wer than the some little novement at this period of the year.

SOUTH WALES AND MONMOUTHSHIRE, ast issued by continues good, last week's spipments having been 90,000 tons, while the total iron cargoes lish patents to yex his thrifty soul:

Utilizing Waste Iron. The following is from the forthcoming issue

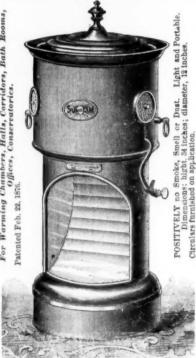
of the Bulletin of the Iron and Steel Association: Mr. William Batty, of 140 Hazel street, Philadelphia, has invented a process by which partly decarbonized Iron, such as stove and machinery scrap, and the harder numbers of piz iron, 2, 3 and 4, can be melted and made softer, or carbonized to such an extent in melting as to take the place of No. I pig for all kinds of castings. By this process any old stove can be made in one melting into a new one. An old tin roof may be transformed into any kind of cast iron article, and clippings of tin and other tin refuse can be utilized in making castings. The inventor claims to be able to melt iron waste of every description, and produce therefrom castings of any desired quality, by modifying certain details and varying the duration of the operation, the rapidity of which (that is, the productive capacity of the cupola) he claims to have doubled, while effecting a decided economy in the consumption of fuel. The essential part of the process seems to be to recarbonize the iron which always loses carbon when being melted in the usual way. This is accomplished by introducing into the furnace a larger proportion of carbon than is contained in the coal, in such a way as to combine with the oxygen of the blast. This is done by dropping in the blast pipe, just before it enters the tuyeres, a fine powdered pure carbon. The oxygen of the blast commingling with the carbon, they both strike the melting zone together, and each atom of oxygen having an atom of carbon with which to unite, a neutral flame is obtained, in which the heat is very intense. The iron is made better, melting more rapidly, and there being no oxygen whatever left to combine with the carbon in the iron, but rather an excess of carbon being present, the fron becomes carbonized. and therefore softer after melting than it was before, a result entirely contrary to that now obtained by iron founders. Where iron is very much decarbonized, Mr. Batty uses as an auxiliary a bed of charcoal in the bottom of the cupola furnace below the tuyeres. The slag that forms in the furnace lies between the tuveres and the top of the charcoal bed, and prevents the latter from burning out, while the molten iron circulates through the charcoal and takes up such a quantity of carbon as will refine, purify and soften the cast iron.

Mr. Batty's process bas been in constant operation in Philadelphia, under his own supervision, for a considerable time, working up tin scrap, old roofing, etc. The patentee will be glad to give any information concerning it upon application. We believe that the melting and utilization of tin scraps has never heretofore been successfully accomplished.

A New Steamship Line .- The Philadelphia Ledger of the 25th inst. says that Morgan, the propretor of Morgan's Texas Railway and Steamship lines, running from New Orleans to Galveston, and also of a line from New York to New Orleans, has established a line of steamships from this city to New York to be run in connection with his Southern line. Heretofore freight for his steamers has been shipped to New York by the Clyde line and thence reshipped. A large frame building has been erected at the foot of Lombard street, pier 24, for the reception and storage of freight. As vet the side wheel steamship Agnes is the only vessel on the line, and she will leave here every Monday and Thursday for New York, and frieght for the South will be transferred to the steamers of the main line. Alonzo Shotwell, Pier 24, South Delaware avenue, is the agent of the new enterprise.

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Prepare for Chilly Mornings and Evenings.



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Everything in the line. Eley's Goods. Colt's Re-volvers, etc., etc. Botton prices guaranteed.

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PIN VISES.

These cuts are about two-thirds size, jaws forged steel. The workman-hip is first-class. They please workmen and amateurs.

Price per doz. \$18 00, with liberal discount

Send for lists and discounts to H. S. Manning & Co., New York. Winne & Campbell, Chicago. Howard, Taliman & Co., Philadelphia,

Jackson & Tyler, Baltimore Chas. Churchill & Co., London, Eng.

Manufacturers' Agents, or to Lowell Wrench Co.,

Worcester, Mass.

JEWELLERS PIN VISE.

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Security, Durability, Convenience.

NEW

[Continued from page 15.]

Holmes, Booth & Hayden, Waterbury, Conn., Brass and Copper (Rolled Wire) Tacks and Rivets, Forks and Spoons.
Lewis, Oliver & Phillips, Pittsburgh, Wagon Hardware, Hinges, Bolts, etc.

E. & G. Brooke, Birdsboro, Pa., Nails, Brads and Spikes.

Dunbar, Hobart & Co, South Abington, Mass., Tacks, Trunk and Clout Nails, Heel and Toc Holly Mfg. Co., Lakeville, Conn., Pocket Cut-

lery. Pennsylvania Galvanic Co., Philadelphia, Galvanized Ship Hardware, etc.
Riverside Iron Works, Wheeling, W. Va., Cut

Nails. William E. Quigley, Waterbury, Conn., Horse-H. Burden & Sons, Troy, Horse and Mule

Shoes.

Rhode Island Horseshoe Co., Providence, Patent Hammered Machine Horseshoes.

Aaron W. Smith, Manchester, N. H., Flexible Horseshoes. Putram & Co., Neponset, Mass., Horse

S. S. Putram & Co., Nepones, Nails. National Horse Nail Co., Vergennes, Vt., Horse Nails. Henry Disston & Sons, Philadelphia, Saws, Trowels, Plumbs, Levels, Squares, Hinges,

Nicholson File Co., Providence, R. I., Files and

Rasps.
S. G. Flagr. & Co., Philadelphia, Steel, Gray Iron and Malleable Castings, Pipe Fitting.
Freeman K. Sibley, Waltham, Mass., Emery and Crocus Paper.
Benjamin Forstner, Salem, Oregon, Patent Perpetual Lip Auger Bits.
Post & Co., Cincinnati, Padlocks, Car and Door Looks, Hinges, etc.

Post & Co., Cincinnati, Padlocks, Car and Door Locks, Hinges, etc.
L Sykes & Son, Philadelphia, Nuts, Bolts, Turnscrews, Washers, etc.
Enterprise Mfg. Co., Philadelphia, Sad Irons, Coffee Mills, Tobacco Cutters, etc.
Eben Moody Boynton, New York, Saws.
Baeder, Adamson & Co., Philadelphia, Sand Paper, Emery Paper and Emery Cioth.
Stevens Patent Vise Co., New York, Parallel Vises and Planer Chucks.
Western File Works, Beaver Falls, Pa., Files and Rasps, etc.
Fisher & Norris Eagle Anvil Works), Trenton, N. J., Anvils, Vises, etc.
McCaffrey Bros., Philadelphia, Hand-cut Files and Rasps.

G. & H. Birnett (Black Diamond Works), Phil-

G. & H. Birnett (Black Diamond Works), Philadelphia, Hand-cut Files and Rasps.
Douglass Mfg. Co., Seymour, Conn., Chisels,
Augers, Auger Bits, Draw Knives.
H. Hammond & Co., Hartford, Conn., Steel
Hammers and Drop Forgings.
I. H. Sternbergh, Reading, Pa., Bolts, Nuts, etc.
A. G. Coes & Co., Worcester, Mass., Screw
Wrenches.

Wrenches.

Morse Twist Drill and Machine Co., New Bedford, Mass., Screw Plates, Wrenches, Stocks, Dies. Chucks, etc.

W. C. Allison & Sons, Philadelphia, Bolts, Nuts,

W. C. Allison & Sons, Philadelphia, Bolts, Nuts, Screws, etc.

Hoopes & Townsend, Philadelphia, Bolts, Nuts, Screws, Rivets, etc.

Pennsylvania Tack Works, Norristown, Pa., Tacks, Shoe Nails, etc. (Copper and Iren).

American Saw Co., Trenton, N. J., Circular Mill, Cross-cut Saws.

Edward H. Knight, Philadelphia, Patent Wreneh (adjustable).

J. M. Carpenter, Pawtucket, R. I., Stocks with Taps and Dies.

S. H. Quint & Co., Philadelphia, Stencils, Pattern Letters, etc.

Clough & William.on, Newark, N. J., Wire Corkscrews.

Corkscrews.

W. F. Palmer, San Francisco, Axes, Hatchets, Adzes, Chisels, Draw Knives.

Alexis Ziviahaff, Russia, Nijni Novgorod, Table and Pocket Cutlery, Shears, heavy Pruning

H. Denizet, France, Langres, Shears, Knives, A. Gallais, France, Paris, Upholsterers' Nails,

etc.
Thinet, France, Paris, Cutlery.
J. Chadonne, Thuillier, France, Nogent, Scissors and Shears.
Thuillier, Thomachot, France, Nogent, Shears.
C. Sommelet, France, Courcelles, Cutlery.
Guellemin Renaut, France, Nogent, Cutlery.
Limet La Parielle & Co., France, Paris, Files,
Rasps. etc.

Limet La Parielle & Co., France, Faris, Files, Raspo, etc.
P. & N. Nicaise, Belgium, Marcinelle, near Charlerol, Bolts and Rivets.
Adolphe Fix, Belgium, Brussels, Iron and Brass Nails.
H. Boker & Co., Germany, Sollngen, Cutlery.
Henry Ottoman Freidrich Beierfeldt, Germany, Swatzenburg, Tinned Iron Spoons and Forks.
Louis Roble, Germany, Dresden, Knobs and Door Trimmings.

Door Trimmings. & H. Vorster, Germany, Hagen, Edge

Tools. Wilhelm Elsenfuhr, Germany, Berlin, Stocks and Dies, Reamers, etc.

J. S. Holler & Co., Germany, Solingen, Cut-

lery.

Hessenbruch & Co., Germany, Rousdorf, . Hessenbruch & Co., Germany, Ronsdorf, Tools, Scissors, etc. Weilman, Germany, Aitona, Cutlery. & O. Liberg, Sweden, Eskilstuna, Shears Chisels, Plane Irons, Gouges, Skates, etc. W. Soderen, Sweden, Eskilstuna, Scissors

F. Lindstrome, Sweden, Eskilstuna, Cut-ting Nippers, Pliers, Pincers and Shoe

Handles, R. H. Smith & Co., St. Catherine, Ont., Saws. Spiller Brothers, St. Johns, N. B., Elge Tools, S. R. Foster & Sons, St. Johns, N. B., Nails,

Tacks, Brads, etc.

Montreal, Quebec, Nads,
Tacks, Brads and Horseshoes.

Starr Mfg. Co., Halifax, N. S., Skates.

Coven Gilmore, Canada, Montreal, Augers, Bits,

J. B. Addis & Sons, Sheffleld, Carvers' Tools.
James Burnand & Co., Sheffleld, Fine Cutlery,
Table and Pocket Knives, etc.
Patent Boit and Nut Co., Birmingham, Bolts,
Nuts, Spikes, Wrenches, Clinch Rings, etc.
Brookes & Crookes, Sheffleld, Pocket Knives,
Scissors, Razors, etc.
George Wostenholm & Son, Sheffleld, Pocket
Knives, Razors, Scissors, etc.
Wilson, Hawksworth, Ellison & Co., Sheffleld,
Pocket and Table Cutlery, Scissors, Knives
and Steel Files.
Ward & Payne, Sheffleld, Chisels, Braces, Bits,
Curvers' Tools, etc.
William Baker, London, Turn Screws, Bits,
Baling Needles.
Mayer & Meltzer, London, Pocket Knives,

William Baker, London, Turn Screws, Bits, Baling Niedles.
Mayer & Meltzer, London, Pocket Knives, Scissors, Razors, etc.
Chistopher Baker & Sons, Birmingham, Coffin Trimmings and Door Fittings.
William Smith & Son, Warrington, Pilers, Nippers, Vises, Dividers, etc.
Wm. Wilkinson & Sons, Sheffield, Sheep Shears, Garden Shears, etc.
Wm. Russell, Cincinnati, Horseshoes, Hand and Machine made, etc.

Wm. Russell, Cincinnati, Horseshoes, Hand and Machine made, etc.
B. Haffaer, Sr., France, Paris, Safes.
Yale Lock Mfg. Co., Stamford, Conn., Time, Safe, Door and other Locks.
Chatwood, Great Britain, London, Fire and Burglar Proof Safes.
Hall's Safe and Lock Co., Cincinnati, Safes.
Herring & Co., New York, Fire and Burglar Proof Safes.
Beard & Bro., St. Louis, Fire and Burglar Proof Safes.

Terwilliger & Co., New York, Fire and Burglar

Terwilliger & Co., New York, Fire and Burglar Proof Safes.

J. Watson & Son, Philadelphia, Bankers', Office and House Safes.

Marvin Safe and Scale Co., New York, Fire and Burglar Proof Safes and Combination Locks. Farrell & Co., Philadelphia, Safe Deposit, Bankers' and Office Safes.

Sargent & Greenleaf, New York, Combination, Time and other Locks.

New Britain Safe and Lock Co., New Britain.

New Britain Safe and Lock Co., New Britain, Conn., Bank and Deposit Safes, Drawer and other Locks. Valentine & Butler, New York, Fire and Burglar Proof Safes. orliss Safe Co., Providence, R. I., Burglar Proof Safes.

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Group XXIII.

Auburn Mfg. Co., Auburn, N. Y., Manual Implements of Tillage.
Hill's Archimedean Lawn Mower Co., Hart ford, Conn., Liwn Mowers.
Tubular Barrow and Truck Mfg. Co., New York, Wheelbarrow.
A. J. Nellis & Co., Pittsburgh, Patent Process for Chilling Steel.
Rhodes & Waters, Elyria, O., Eureka Post Hole Digger. liver Ames & Sons, Easton, Mass., Shovels Oliver

and Spades.

South Bend Iron Works, South Bend, Ind.,
Chiled Plows and Attachments.
Worthington, Cooley & Co., Jackson, Mich.,
Rakes, Hoes, Forks, etc.
Maxwell, Rowland & Co., Philadelphis, Shovels

and Spades.
Smith & flarper, Philadelphia, Hoes and Rakes.
B. Rowland & Co., Philadelphia, Shovels, Spades, Scoops, etc. Henry S. Vanderbilt, Washington, D. C., Wagon Jack. John Ashcroft, Marion, Oregon, Pruning

Shears.
S. N. Gustino, Mexico, N. Y., Animal Poke.
A. J. Nellis, Pittsburgh, Hay Fork, Gripping Claw, etc.
Compartment Milk Can Co., Rockport, Vt., Milk Pans.
Geo. Berguer & Co., Washington, Mo., Apple

and Peach Parers.
H. P. Raukins, Allegheny, Pa., Meat Chopper.
Frank A. Parker, Reading, Pa., Apple Paring

Machines.
August Nittinger, Philadelphia, Meat Chopper and Sausage Stuffer.
A. C. Cotton, Vineland, N. J., Adjustable Hoes.
C. E. Petterson, Sweden, Lango Bruk, Scythe Blades. Geo. Barnes & Co., Syracuse, N. Y., Knives and

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J. C. Bidwell, Pittsburgh, Plow and Steel Crucible Casting Work.

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Russell, Burdsall & Ward, Port Chester, N. Y., Bolts and Nuts for Agricultural Machinery.

H. Burden & Sons, Troy, N. Y., Model of Horseshoe Machine.

A. W. Wills, Birmingham, England, Tools, Hoes, Axes, etc.

Hoes, Axes, etc. George Griffith, Philadelphia, Spades and Myers & Ervion, Philadelphia, Assortment of Forks.

Myers & Ervion, Philadelphia, Assortment of Forks.

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Balls Scythe Works, Saratoga, N. Y., Grain Scythes and Cradles.

Freeman, Valentine & Green, Ithaca, N. Y., Hand Corn Sheller.

Dunn Edge Tool Co., West Waterville, Me., Scythe Blades, Grass Hooks, etc. James Fusell, Sons & Co., England, Scythe Blades, etc.

R. H. Allen & Co., New York, Horticultural Implements.

Royal Furnsces, Germany, Wurtemberg, Scythes.

Austrian Commission, Austria, Scythe Blades.

P. P. Flowering, Bethesda, Mass., Pruning Shears.

Geo, Cheavin, Rapid Water Filters.

ting Nippers, Piiers, Pincers and Shoe Punches.
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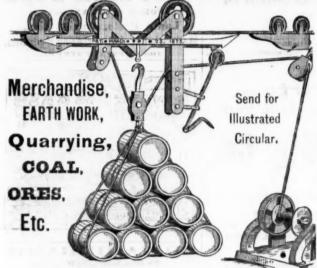
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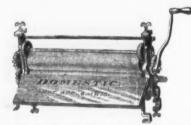
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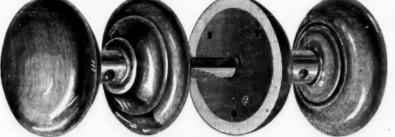
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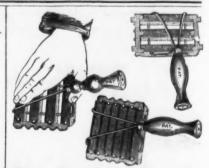
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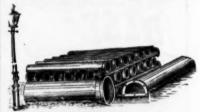
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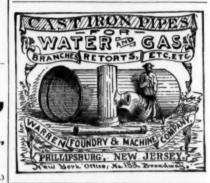
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Payne B. W. & Sons. Corning, N. Y.
Shapley & Wells. Binghamton, N. Y.
Suyder Ward B., 84 Fulton, N. Y.

Collins, Geo. B. 10 Warren, N. T. Faucets. Brass, Makers of. McNab & Harlin Mfg. Co., 56 John, N. Y.

Faucets, Self-Measuring, Makers of, Enterprise Mfg. Co., of Pa., Phils, and N. Y

Faucets, Self-Molauring, Manero, Raterorise Mfg. Co., of Pa., Philis. and N. Y.

Files, Importers of.
Carr J. & Killer, 82 John, N. Y.

Fisaer Joseph S., 411 Commerce, Phila.

Fraser Feter A. & Co., 65 Fulton, N. Y.

Moss F. W., 50 John, N. Y.

Moss F. W., 50 John, N. Y.

Moss F. W., 50 John, N. Y.

Sanderson Bros. & Co., 16 Cliff. N. Y.

See and John N. Y.

Files, Manufacturers of.

Admiration File Co., Pawtucket, E. L.

Americal File Co., Pawtucket, E. L.

Americal File Co., Pawtucket, E. L.

Parnett G. & H., 41 and 43 Richmond, Philis.

Disston Henry & Sons, Phila.

Draper C. F. & Co., Sing Sing, N. Y.

Heller & Bros. Newry, N. J.

Hiscox File Mfg Co., West Chelmsford, Mass.

Johnson & Bro., 1 Commercial, Newark, N. J.

Jowitt Thos. & Sons, Sheffeld.

McCaffrey & Bro., 1732 and 1734 N. 4th, Phila

Nicholson File Co., Providence, E. I.

Fire Strick, Makers of.

Brooklyn Clay Retort and Fire Brick Wor Dyke, Sk., Brooklyn, N. Y. Haall A. & Sone, Perth Ambov, N. J. Haall A. & Sone, Buffalo, N. Y. Maurer Henry, 418 East 23d, N. Y. Kreischer H. & Son, 85 Georek, N. J. Newkomet Philip, 23d and Vine, Phila Newton & Co., Albany, N. Y. M. Phila Newton & Co., Albany, N. Y. M. Phila Newton & Co., Albany, N. Y. M. Phila Welori and M. Res E. 18th, N. Y. Weber Adam, 1638 E. 18th, N. Y. Woodland Fire Brick Co., Woodland, Ph.

Flint and Emery Paper and Cloth. Bacder, Adamson & Co. 730 Market, Phila Fishing Tackle. Shinley A. B. & Son, 508 Commerce, Phila Fluting Machines.
The American Machine Co., 430 Walnut, Phila

Forges. Portable, etc. Keystone Portable Forge Co., Philadelphia. Place George, (Hurricane) 121 Chambers. N

Sami. J. Cresswell Jr. 812 Race. Phila., Pa.
Foundry Facings.
Cutler & Brown, 28 Cherry, N. Y.
Paxson J. W. & Co., 514 Beach, Phila.
Whitehead Bros., 517 W. 15th, N. Y.
Fruit Can Trimmings.
Furnaces. Makers of M. Y.
Furnaces. Makers of M. Fourth, Phila. Pa.
Garvanized Iron.
Lefterts Marshall Jr., 90 Beckman, N. Y.
St. Louis Galvanizing Works.
Gas Stoves.
Morton A. W., 22 Platt, N. Y.
Goog Hells. Makers of
Edw. Sweeney, 4 Duane, N. Y.
Governors.
Junius Judson & Son. Rochester, N. Y.
Gard & Granor Co., Bethlehem, Pa.
Grand Butter, Co. W. 19. N. Y.
Vanderbit Geo., foot W. 19. N. Y.

Governors.
Junius Judson & Son. Rochester, N. Y.
Shive Governor Co., Bethlehem, Pa.
Grate Bars.
Vanderblit Geo., foot W. 19. N. Y.
Grath Cradles and Snaths.
Semple, Birge & Co., St. Louis, Mo.
Grindstones.
Parker Gilbert, 225 Market, N. J.
Wood Waiter R., 283 and 285 Front. N. Y.
Worthington & Bons, North Amberst, O.
Guns, &c.
Moore's John P., Sons, Nu Brondway, N. Y.
Windmuller Louis & Rocker, 20 Reade N. Y.
Gunsowder. Makers of,
Kneeland F. L. Guponth 20 Wall, N. Y.
Hampowder, Makers of,
Kneeland F. L. Guponth 20 Wall, N. Y.
Hammond H., Hartford, C., Brooklyn, E. D., N. Y.
Hammond H., Hartford, C., Brooklyn, E. D., N. Y.
Hammond H., Hartford, C., St. Louis, Mo.
David Sullivan, Montreal, Canada,
Granam & Haines, 113 Channoers, N. Y.
Walso, Coulter & Flagler, S. Chambers, F. Y.
Wilson J. Clark & Co., St. Beekman N. Y.
Hardware Occupancy
Betts & Burger, 86 Chambers, N. Y.
Lioyd, Supplee & Walton, &S Market, Phila,
Ganckenbush, Townsend & Co., 56 Keade, N. Y.
Wilson J. Clark & Co., Childon, N. Y.
Wilson J. Clark & Co., Childon, N. Y.
Wilson J. Clark & Co., Childon, N. Y.
Wilson J. Clark & Co., 60 Chambers, N. Y.
Wilson J. Clark & Co., 60 Chambers, N. Y.
Wilson J. Clark & Co., 61 Dunne, N. Y.
Wilson J. Clark & Co., 61 Dunne, N. Y.
King, Blugge & Co., 60 Chambers, N. Y.

Wilson J Clark & Co., 31 Beekman N.
Har dware Importers,
Boker Hermann & Co., 101 Duane, N. Y.
King, Briggs & Co., 80 Chambers, N. Y.
Van wart & McCoy, 134 and 136 Duane, N. Y.
Harrold F. W., 78 Chambers, N. Y.
Windmulier Louis & Roelker 20 Reade N. Y.

Van Wart & McCoy, 134 and 136 Duane, N. Y. 11
Harrloff F. W., 18 Chambers, N. Y. 11
Windmulier Louis & Roelker 20 Reade N. Y. 11
Hardware Manufacturers,
American Spiral Spring Butt Co., 22 Beekman, N. Y., 25
Blake Bros. Hardware Co., New Haven, Conn. 30
Sarnett Oscar, Newark N. J. 4
Blake Bros. Hardware Co., New Haven, Conn. 30
Garnett Oscar, Newark N. J. 4
Clark & Go., Buffalo, N. Y. 20
Corbin P. & F., 87 Chambers, N. Y. 20
Corbin P. & F., 87 Chambers, N. Y. 20
Corbin P. & F., 87 Chambers, N. Y. 20
Enterprise Mfg, Co., Phila. 39
Hart. Bliven & Mead Mfg, Co., 243 Pearl N. Y. 30
Miller a Fails Mfg, Co., 74 Chambers, N. Y. 21
Parr Geo., Buffalo, N. Y. 13
Pecc G. Webster, 110 Chambers, N. Y. 11
Pratt & Co., Buffalo, N. Y. 11
Pratt & Co., Buffalo, N. Y. 12
Frovidence Todo Co. Balawia, Ill. 13
Dischall Belden Co. Daibury, Conn. 32
Union Mfg, Co., 99 Chambers, N. Y. 7
Van Wagoner & Williams 82 Beekman, N. 7
Awayoner & Williams 82 Beekman, N. 7
Grant & Co., Newark, N. 24
Hardware Naperialites,
Carver John, 285 Monroe, N. Y. 24
Langdon Mig, Co., 81 Chambers, N. Y. 24
Langdon Mig, Co., 81 Chambers, N. Y. 24
Langdon Buffer, Co., St. Louis, Mo., 30
Heisting Regienes, Maker of, 20
Crane Bros. Mfg, Co. Chicago, Ill. 9
Colts Bros. & Co., St. Boroakway, N. Y. 9
Hog Ringers, Chambers, Quintin, Decatur, Ill. 20
Chambers & Co. St. Louis, Mo. 20
Chambers & Quintin, Decatur, Ill. 20
Chambers & Quintin, Decatur, Ill. 20
Chambers & Co. St. Louis, Mo. 2

Orane Bros. & Co. 348 Broadway, N. Y.

Hog Ringers.
Chambers & Quinlan, Decatur, Ill.

Herse Nalls, Makers of.
Ausable Horse Nall Co. 35 Chambers, N. Y.
Northwestern Horse Nall Co. 6theago, Ill.
Globe Nall Co., Boston, Mass.
Platt & Co., Buffalo, N. P.
Putnam S. & Co. N. Neponset, Mass.

Herse Shace, Makers of.
Boston Rolling Mills, It Batterymarch, Boston.
Burden Iron Works. 100, N. Providence, K. I.,
Schoenberger & Co., Pittsburgh, Fa.

Schoenberger & Co., Flands, Hydraulic Jacks.
Ondgeon Richard. 24 Columbia. N. Y.

Dudgeon Richard. 24 Columbia. N. 1

Budgeon Richard. 24 Columbia. N. 1

Budgeon Richard. 24 Co., 54 Beekman, N. Y. 6

Busurauce, Beiler.

Hartford Steam Boiler Inspection and Insurance Co., 25

Herb Brokers.

Boynton Geo. A., 70 Wall, N. Y. 4

Crane U. D., 104 John, N. Y. 4

Hatry A. G., Pittsburgh, Pa. 4

Hazard T. D. 204 Fearl, N. T.

Smith Manner, 56 Beaver, N. T.

Smith Manner, 56 Beaver, N. T.

Schoolster, N. V. J. Hazaro ...

Built W. Minor. 36 Heaver, N. Y.

Iron H. Idgente and Iron Works. Rochester, N. Y. 10

Leis H. Warn or Cold Blast,

Rochester of Warn or Cold Blast,

Iron Commission Merchante.

Brown T. Horace, 265 & Walnut, Phila.

Hand Jas. C. & C. O., Gls and 61 warker, Phila.

6 Spooner & Collina, St. Louis, Mo.

5 Iron. Pigs. Importers of.

Williamson James & Co. 60 & Wall, N. Y.

Hand Jas. C. & Co., 614 ann 616 Market, Phila.
Spooner & Collins, St. Lonis, Mo.
Iren. Pig. Importers of.
Williamson James & Co.. 69 Wall, N. Y.
Iren Dealers.
Abeel Brothers, 190 Bouth, N. Y.
Bonnell, Botsrell, 70 Bouth, N. Y.
Bonnell, Botsrell, 70 Bouth, N. Y.
Bonnell, Botsrell, 70 and fl West, N. Y.
Brady Matthew, 4 Bridge, Brooklyn, N. Y.
Cleveland, Brown & Co., Cleveland, O.
Cooney Daniel F, 38 Wasnington, N. Y.
Huerstell G. 99 Market Slip, N. Y.
Huler, Lord & Co., 139 Greenwich, N. Y.
Fuller, Lord & Co., 139 Greenwich, N. Y.
Fuller, Lord & Co., 139 Greenwich, N. Y.
Jackson & Chase, 236 and 228 Franklin, N. Y.
Jackson & Chase, 236 and 228 Franklin, N. Y.
Jackson & Chase, 236 and 228 Franklin, N. Y.
Jackson & Chase, 236 and 238 Franklin, N. Y.
Jackson & Co., 250 Market, N. Y.
Oquen Wallace, St. 51.34 and 91 Eim, N. Y.
Pierson & C. W. 25 Wallam, N. Y.
Romards D. W. & Co., 25 Mangin St. N. V.
Savder Ass. Richmond, Vs.
Wallace Wm. H. & Co., 25 Mangin St. N. V.
Wallace Wm. H. & Co., 26 Mangin St. N. Y.
Williamson James & Co., 69 Wall, N. Y.
Whitney A. R. & Bro. 38 Hudson N. Y.
Warner A. B. & Sons, 28 and 29 West, N. Y.
Williamson James & Co., 60 Wall, N. Y.
Whitney A. R. & Bro. 38 Hudson N. Y.
Fren. Manufacturers of Market Planklin, N. S.
Braden Fron Works, Troy, N. Y.
Cleveiand Rolling Mill Co., Cleveland, O.
Comn Wm. E. & Co., 20 Cliff, N. Y.
Berson Macrain & Co., Pittsburgh, Pa.
J. & J. Hogers Iron Co. Ausable Forks, N. Y.
Millamskee Iron Co., Miwankee, Wis.
On Dominion Iron & Nail Works Co., Richmond, Vs. Eron, Pontshee Forks, N. Y.
Millamskee Iron Co., Miwankee, Wis.
On Dominion Iron & Co., Pittsburgh, Pa.
J. & J. Hogers Iron Co., Miwankee, Wis.
On Dominion Iron & Co., Pittsburgh, Pa.
J. & J. Hagers Iron Co., Miwankee, Wis.
On Dominion Iron & Rail Works Co., Richmond, Vs. Eron, Pinnshee & Sheet Manufacturers of Wood W. D. & Co., Pittsburgh, Pa.
Jron, Pinnshee & Sheet Manufacturers of Wood W. D. & Co., Pittsburgh, Pa.
Jron, Pinnshee & Sheet Manufacturers of Wood W. D. & Co., Pittsburgh, Pa.
Jron, Pinnsheet S

Lanterns, Manufacturers of.

Dietz R. E., (Tubular) 54 and 56 Fulton, N. T...

Howard & Morse 45 Fulton, N. Y.... Lead Pipe. &cc., Manufacturers of. Bayley, Farrell & Co., Pittsburgh, Pa.

Levels.

Disaton Henry & Sons, Phila...

Heuermann W. 4 Cedar, N. Y. Bohannan Wilson, Broadway and Kossuth, Brook

Locks. Manuscurers of Bohanna Wilson, Broadway and Kossuth, Broog Bohanna Wilson, Broadway and Kossuth, Broog E. D. D. K. Miller Lock Co., 12 Cherry, Philadelphia, Romer & Co., Newark, N. J., Christon Nut Co., 28 Beckman, N. Y. United States Lock Co., Kingston, Massa., Yale Lock Mag. Co., 289 Broadway, N. Y. Machinery. Makers or. Blias & Williams, 167 Piymouth. Brooklyp. Blias & Williams, 167 Piymouth. Brooklyp. Forsaith S. C. & Co., Manchester, N. 11 Hendey Machine Co., Wolcottsville, C. Pratt & Whitney Co., Oxfoottsville, C. Pratt & Whitney Co., Hartford, Conn. Sellers Whitney Co., Hartford, Com. Sellers Whitney Co., Babure, Co. Machine Phila. Pratt & Whitney Co., Babure, Co., Machine Screw, N. Nikery of Ph. Machine Screw, N. Nikery of Ph. Duercux C., 28 Hizabeth, N. Y. Machinets, Tools, Machinets, N. Y. Machinets, Tools, Makery of Ph. Machinets, Tools, Makery of Ph. Machinets, Tools, Makery of Ph. Machinets, Ph. Machine

Machinists' Tools, Makers of, Blaisdell P. & Co., Worcester Mass. Machinists.

Hardman James Jr., Il John, N. Y.,
The Hull & Belden Co., Danbury, Conn Malleable Articles. Maker of. Hammer & Co., Branford, Ct.... Match Safe. Evans Price, 638 Greenwich, N Measuring Tupes. Eddy GeoM.& Co., 353 Classon Ave., B

Mechanics Tools.
The Douglass Mfg. Co., 62 Reads, N. Y. Mallers. N. Y. Handle & Mallet Works, 4'6 E. Ho Manganese.
Pyrolusite Manganese Co., 214 Pearl, N. Y

Pyrolusite Manganese Co., 214 Pearl, N. Y.

Metal Bealers and Brokers.
Coddington P. B. & Co., & and 27 Cliff. N. Y.
Crane C. O., 104 John. N. Y.
Fuller, Dana & Fizz. Boston, Mass.
Glegg H. L. Co., 108 Wainut, Phila.
W. J. Hammonn, Pittaburgh, Ps.
Phens, Dodge & Co., Cliff. bet. John & Fulton, N.
Purves, A. & Son, cor, South and Fenn, Phila.
Oningy J. W., W. William, N. F.
Sturges Frank & Co., 72, 74 & 76 Lake Chicago
The New Haven Copper Co., 255 Pearl, N. Y. Metaliurginin.
Metaliurginin.
Britton J. Blodgett 339 Walnut Phila
Britton J. Blodgett 339 Walnut. Phila
Britton J. Blodgett 339 Walnut. Phila
Britton J. Blodgett 339 Walnut.

Metal Roofing. Hickox Mfg. Co., 280 Pearl N. Y... Meat Chapping Machinery.
Balley Wringing Machine Co., 106 Chambers, N. Y.
Murray Iron Works, Burlington, Iowa. Miners' Candies. Makers of James Boyd's Sons, 10 and 12 Franklin, N. Y

Mining Spikes

Roseberry Geo. D., Pottsville. Pa., Molders' Tools. Carter H. 290 Pearl, N. Y... Mouse Traps. Catchemalive. Makers of Dietz R. E., 54 and 56 Fulton, N. Y. Nails enberger & Co., Pittaburgh. Pa. Nail Pullers. Malthy, Curtiss & Co., 34 Reade, N. Y...

Maltby, Curtiss & Co., 34 Reade, N. Y.

Nicksel Plusters Plating Works, 47 Ann. N. Y.

Colt. A. E., 47 Beekman, N. Y.

Colt. A. E., 47 Beekman, N. Y.

Hartman John, 574 N. Seventh, Philadelphia
Manhastan Nickel Works, 196 and 183 Center, N. Y.

New York Nickel Plating Co., 123 West 24th, N. Y.

Owen, S. & Co., 121 E., 18, N. Y.

Rochrig, Fred Wim, 47 Center, N. Y.

Wicks & Co., 78 First st., Brooklyn, E. D., N. Y.

Wilder & Co., 114 Fulton, N. Y. forway Shapes, Rollers of. Rowland Wm. & Harvey, Frankford, Phils Note Broker. Gallauget r. W 3 and 5 Wall, N. Y.

Gallanget r. W. Sand S. Wall, N. Y.

Nuts. Bolts. etc., Makers of,
Cark Bros. & Co., Middele, Conn.
Huller, Ford & Co., 189 Greenwich, N. Y.
Huller, Ford & Co., 189 Greenwich, N. Y.
Levis, Oliver & Full P. H.
Roseberry Geo. D., Pottaville, Pa. R.
Rassell, Birdsall & Wayd, Port Chester, N. Y.
Shelton Co., Birmingfilm, Conhester, N. Y.
Shelton Co., Brainingfilm, Conhester, N. Y.
Shelton Co., 38 Heekman N. Y. Gil Cook Stoves. Ricaner A., 160 William, N. Y.,

Oli Lubricating, Makers of American Natural Oil Co., 26 Cedar, N. Y Old Iron, etc. Gregg H L. & Co., 108 Walnut, Philadelph Ore Crushers. Blake Crusher Co., New Haven Ct Paints and Oils, Deaters in. Devoe F. W. & Co., 117 Fulton, N. Y.

Pans. (Oripping and Bread.) Lewis, Daizell & Co., Pittsburgh, Ps.

Devoe F. W. & Co., 117 Fulton, N. Y.
Pans. (Dripping and Brend.)
Lewis, Daizoli & Co., Pittaburgh, Ps.

A. V. Briesen, 285 Broadway, N. Y.
Howson & Son, Phila, and Washington, D. C.
Munn & Co., Scientific American 27 Park Row N. 1, 25
Spencer A. H., 28 State Boston, Mass.
24
Pipes, Fittings, etc., Makers or,
Eston, Cole & Burnham Co., 85 John, N. Y.
25
Pipes, Fittings, etc., Makers or,
Eston, Cole & Burnham Co., 85 John, N. Y.
27
Pancoast & Maule, 27 Pear, Phila.
28
Pipes, Water and Gas, Makers or,
Barr Edward, 78 John, N. Y.
28
Pipes, Water and Gas, Makers or,
Barr Edward, 78 John, N. Y.
29
Pipes, Water and Gas, Makers or,
Barr Edward, 78 John, N. Y.
20
Pipes, Water and Gas, Makers or,
Warren Foundry & Macn. Co., Phillipburg, N. 3, 2,
Wood R. D. & Co., 400 Chesnut, Phila.
29
Pipene Frons, Manufacturer of
Buck Bros, Millbary, Mass.
10
D. R. Barton Tool Co., Rochester, N. Y.
Pianes, Milladreturers of
Bates, Tringling Machine Co., 16 Chambers, N. Y.
21
Pianes, Milladreturers of
Bates, Tringling Machine Co., 16 Chambers, N. Y.
31
Piows, Chillied Iron, Makers or,
Stanley Guie & Leve Co., 35 Chambers, N. Y.
31
Piows, Chillied Iron, Makers or,
South Bend Iron Works, South Bend Ind.
31
Piows, Chilled Iron, Makers or,
South Bend Iron Works, South Bend Ind.
32
Power Hammers, Makers or,
South Bend Iron Works, South, Bend Ind.
33
Presses, Revers, Makers or,
Bottlinger, Makers or,
Brossols, Makers or,
Bro

Printing Presses. Kelsey & Co., Meriden, Conn. Patteys, Friction.
Penfield Block Works, Lockport, N. Y. Penneld Block Works, Lockport, N. Y.
Punnps, Makers of.
Clayton Jas., 11 Water, Brooklyn, N. Y.
Douglas W. & B., Middletown Conn.
Rumsey & Co., Seneca Fails, N. Y.
Union Mfg. Co., 98 Chambers, N. Y.

Idinisey & Co., Seneca Fains, N. Y.
Pyrometers.
Brown Edward, 31 Walout, Phila.
Railrond and Mining Tools.
Metcalf, Faul & Co., Pittsburgh, Pa.
Halies Edward, 31 Walout, Phila.
Ballaria & Co., Pittsburgh, Pa.
Halies Bullaria & Co., Seneca Bullaria & Co., Atkins Bros., Pottsville, Pa.
Cambria Iron & Co., Johnstown, Pa.
Cleveland Rolling Mill Co., Cleveland, O.
Griswold John A. & Co., Troy, N. Y.
Lackawanns Iron and Coal Co., Seranton, Pa.
Milwaukee Iron Co., Milwaukee, Wis.
The Edgar Thomson Steel Co., 57 Broadway, N. Y.
Razor Straps, Makera of,
B. F. Badger & Son Charlestown, Mass.
Hivets.

B. F. Badger & Son Unarressown, Recoklyn, E. D. Klyets,
Timne's Son Peter, 24 North étn, Brooklyn, E. D. Read McCrapers, & C.
Semple, Mrge & Co., St. Louis, Mo.
Redling Mill Machinery, etc., Manufacturers
Moore James, Cor 18th and Buttonwood, Phila.... Relling Mill Machaery, etc., Manufacturers of Moore ames, Cor light and Button wood. Thilm... Reefing Paints.

Reefing Paints.

Prince's Metalile Paint Co., 225 Pearl, N. Y.

Rules, Manufacturers of...

Belcher Bros. & Co., 68 Chambers, N. Y.

Stanner due and Level Co., 30 Market, Phila.

Saws, Makers of.

Reader Adamson & Co., 78 Market, Phila.

Saws, Makers of.

Anterican Saw Co., Trenton, N. J.

Atkins E. C. & Co., Indianaoolis, Ind.

Boyaton E. M., 80 Beckman, N. Y.

Disston Henry & Sons, Phila.

Peace & Hogan, Williamaburg, N. Y.

Wheeler, Madden & Clemson Mig. Co., ifadictown.

N. Y.

The Chicago screw Co., Servews, Importers of Bruce Geo. W., 1 Platt, N. Y.
Gueutal deorge & Son. 59 W. 4th. N. Y.
Screw Drivers, (Improved) Makers of.
Disaton Henry & Sons, Phila.

Sevine Souths. Vermont Snath Co., 100 Chambers, N. Y

Section Snorths.
Vermont Snorths.
Vermont Snorths.
Vermont Snorths.
Dishman F. E., New Albany, Ind.
Pike A. F. East Haverbill, N. H.
Senmies Tubes. Makers of
Merchant & Co., Phila., Pa.
Shovels. Since S. M. Mfg. Co., 206 Water, N. Y.
Hussey, Binns & Co., Pittsburgh, Fa.
Iron Clad Can Co., 25 Cliff, N. Y.
Iron Clad Can Co., 25 Cli

Manung & squier, 18 Liberty, N. Y.

"Anning & squier, 18 Liberty, N. Y.

"Anning & dand Jinnanned Tir Ware.

Sheyard Sidney & Co., Buffalo, N. Y.

Sturges Frank & Co., "2, 74 & 76 Lake, Chicago.

"I minimers, etc., Makere of,

I radiev Mg. Co., Syracuse, N. Y. 2.

Duageon idonara, 24 Coumbis, N. Y. 2.

"Steam Pumps, etc., Manafacturers of,

Aquometer Seam Pump Co., 10 South, Del. Ave.,

"Phil." Aguamer Beam Pump Phil. Carr A., 48 Cortland, N. Y Crane Bros. Mtg. Co. Unicago, Ill. Knowles Steam Pump Works, Warren, Mass. Valley Machine Co., East Hampton, Mass.

Valley Machine Co., East Hampton, Anasrenum Traps
Albany Steen Trap Co., Albany, N. Y.,
Steel Co., 21d 218 N. 3rd, Phila.,
Fragg Stanley G. & Co., 21d 218 N. 3rd, Phila.,
Chester Castungs Co., Evelina, Phila, Pa.,
Crucible Steel Casting Co., Pittsburgh, Pa.,
Pittsburgh Steel Casting Co., Pittsburgh, Pa.,

Crucible Steel Casting Co., Pittsburgh, Fn., Steel Importers.
Carr J. & Riley, 82 John, N. Y.
Sulzbacher, Hyman, Wolff & Co., 96 Cliff, N. Y.
Hobson Francis & Son, 97 John, N. Y.
Johns, Meyer & Colver, Sheffield, Eng., Moss & W. 80 John, N. Y.
I tersons & Co., 23 Broatway, N. Y.
Sanderson Bros. & Co., 55 John, N. Y.
Van Wart & McCov, 134 and 136 Dunne, N. Y.
Wardow, & C., 25 John, N. Y.
Wardow, S. & C., 35 John, N. Y.
Wardow, S. & C., 35 John, N. Y.

Van Wart & McCov, 134 and 136 Duane, N. Y. Wardlow S. & C., 39 John, N. Y. Steel Manufacturers, Anderson & Woods Pittaburgh.
Chrome Steel Co., Brookivn, E. D., Cleveland Rolling Mill Co., Cleveland, O., Gautler D. G. & Co., Jersey City, N. J. Griswold Jonn A. & Co., Troy, N. Steel, C. S. Wardler, D. G. & Co., Toy, N. Y. Lackswanna Iron and Coal Co., Seranton, Pl. Midvale Steel Works, Nicetown, Phills, Pa. Mittle: Mctoaff & Parkin, Pittsbaugh.
Rowland Win, & Harvey, Frankford Phila.
Smith, Sutton & Co., Pittsbaugh.
The Edgar Thomson Steel Co., 51 Broadway, N. Steel Syrnal Springs. Manufacturers of Chattlion & Sons, 91 and 95 Cliff, N. Y.
Steel Syrnal Springs. Manufacturers of Chattlion & Sons, 91 and 95 Cliff, N. Y.
Steel Syrnaps.
Rogger Richard H., 45 Ann. N. Y.
Steel Syrnaps.
Rogger Richard H., 45 Ann. N. Y.
Springs.
Rogger Richard H., 45 Ann. N. Y.
Springs.
Rowland Win, & Harvey, Frankford, Phila.

Station Mig. Co., to Calcold Mig. Springs.

Rowland Wm. & Harvey, Frankford, Phila...

Squares, Steel and Iron, Makera of.

Hart. Bilven & Mead Mig. Co. 243 Pearl, N.Y.,

Stocks and Dies

Holloyd & Co., Waterford, N.Y.,

Stone Crushing Machines.

Blake Crusher Co., New Haven, Ct.

Tlebout T. B. Sons. Taunton Mass.
Field A. & Sons. Taunton Mass.
Grandy & Kenworthy, 165 Greenwich, N. Y.
Shelton Co., Birmingham, Ct. Shelton Co., Birmingnam, Ct.

Taps and Dies.
Carpenter J. M., Pawtucket, R. L.,
Manning H. S. & Co., 111 Liberty, N. Y.

Transier Ornaments.
Fechteler Julius, 104 John, N. Y.

Transfer Units, 104 John, N. Y.

Tree Praners.
Lee E. S. & Co., Rochester, N. Y.

Try Squares, Hevels & C., Makers of
Builey Leonard & Co., Hartford, Ct.
Disston Henry & Sons, Phila.

Tube Expansers.

Dudgeon Richard, 24 Columbia, N. Y.

Valves, Gas. Water and Steam.

Junius Judson & Son. Rochester, N. Y.

Stevens & McLesn, 28 and 300 Monroe, N. Y.

Ludiow Valve Mfg. Co., Troy, N. Y.

Visca.

Imnaner a. St. Si Washington, Boston, Mass.
Buerk J. E., Si Washington, Boston, Mass.
Shive Governor Co., Bethlehem, Pa. 34
Water Motor.
Backus Bros., Newark, N. J. 12
Water Paits, Manilia.
Ilyat W. F., Si Beckman, N. Y.
Water F., Si Beckman, N. Y.
Water F., Si Beckman, N. Y.
Water F., Si Beckman, N. Y.
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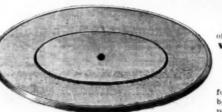
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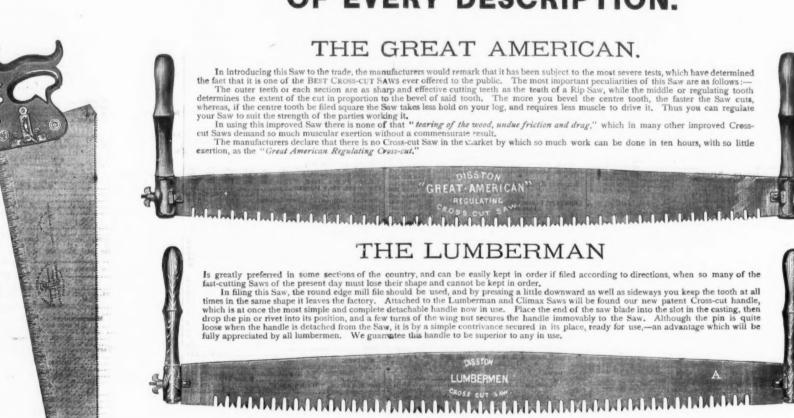
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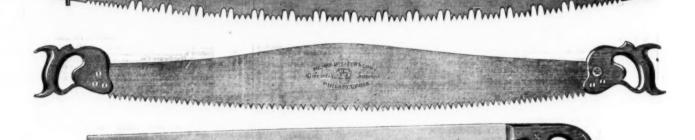


THE NONPAREIL.

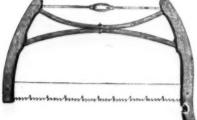
The Nonpareil, of which the accompanying cut is a representation, is composed of sections of four cutting teeth, each section intersected by a cleaner tooth. It will be observed that the cavities on each side of the cleaner teeth are much larger and deeper than those of the cutting teeth, serving as a receptacle or chamber for dust, and effectually freeing the Saw during the operation of cutting. The cleaner teeth should always be kept shorter or lower than the cutting tooth. (The Gauge, as shown below, is made expressly for this purpose, and by its use the cleaner teeth of any Saw can be regulated and kept of exact length.)

This Saw has given unbounded satisfaction wherever it has been used, and we are constantly receiving orders for the same; in fact, in some sections, and for sawing soft lumber, it is preferred to any other Saw.

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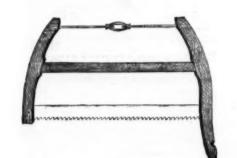


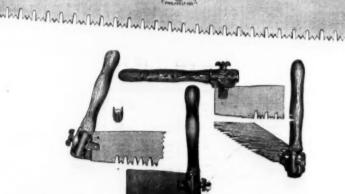














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Cook's(new list) Karson's Patent	Fast Joint, Narrow. """ Lt. Narrow. Lt. Narrow. Broad. Loose Joint, Broad. Inside Blint, Regular. Loose Pin. Wight. Am. Spiral Spring Butt Co. Union Spring Hinge Co., Union Mg. Co. Spring His Blind Butt, Parker. "Paimer. Seymour."
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Machine dis 55 & 60 % Boit Ends dis 60 Borax 12% & 15% C. % B	American Table Merican Pocket Cutler Am. Pocket—Humason &
Horing Machines. Upright. Angular. Hovey's no Augers. \$719 \$4'00 net "with Augers. 5'00 \$00 net	Naugatuck Cutlery Co Dippers.
Parr's, no Augers. 9:00 11:00 dis 40 5 Parr's, no Augers. 7:50 16:00 dis 80 5	Dippers, Britanniaper doz Cocoa, Plain 'Bimmed Bog Collars' Embossed Gilt.
with Augers 500 600 Bet	Hrase
Phillips', with Augers 10 00 dis 25 s	Torrey's Rod
Thion Nut Co. new list dis 50&10&5 C	Johnson's "Gem (Coil) — No. 1, Large, Japanned.
Humason, Peckiey & C. a	NO. 2, Mediu'n, " .
Sargent & Co. " Braces, dis 50&10&10 s Braces, dis 40&510 s Q S Backus, dis 40&510 s Wilson Mfg. Co. dis 10 s Spofford's Patent, dis 50 s Koble's Patent, dis 40&610 s Koble's Patent, dis 40&610 s Common Esis (American) dis 40&610 s Brackets, Shelf, dis 60&10 @ 65&10 s Braght Wire Goods, dis 50&10 s Bright Wire Goods, dis 50&20 s Bright Wire Goods, dis 50&20 s Buil Hings, Union Nut Co. dis 50&20 s Sargent's, dis 60&10 s Hotchkis Zi, in \$2^25 net Hinnason, Bockley & Co. s Butchere, Cleavers,	Japanned p Coppered p Galvanized p Nickeled p
Sportura = Fascat Gis 50 S Noble's Fascat Gis 404.5 S 1 ves' Fascat Gis 404.5 S 2 ves' Fascat Gis 404.5 S 3 ves' Fascat Gis 404.5 S 4 ves' Fascat Gis 404.5 S 5 ves' Fascat Gis 404.5 S 6 ves' Fascat Gis 404.5 S 7 ves' Fascat Gis 404.5 S 8 ves' Fascat Gis 404.5 S 8 ves' Fascat Gis 404.5 S 9 ves' Fascat Gis 404.5 S 9 ves' Fascat Gis 404.5 S 1 ves' Gis 404.5 S	Nickeled p Philadelphia Barker's Concealed Philadelphia
Brackets, Shelf, dis 60&10 @ 65&10 & Braght Wire Goods dis 65&10 & Control of the	Drawing Knives. Crossman's No. 1 D. R. Marton Tool Co Donglass, Extra
Sargert's dis 60&20 Hotchkies 2% in \$2.25 net Homason Beckler & Co.	Douglass, Extra Hart Mig. Co., No. 1 Merrill Nobles Mig. Co Predievie
Hutthers' Cleavers. Hutthers' & Beckley Mfg. Co dis 206 102 102 102 102 102 102 102 102 102 102	Bradley's. Adjustable Handle Drills and Drill Ste
Harton Tool Co	Blacksmiths Self-Feeding
119'00 221'00 224'00 227'00 200'00 325'00 236'00 247'00 247'00 247'00 325'00 32	Hotchkias
	Miller's Falls

York Wholes	al
Butts. dis 80 %	Rate
Ask of the control	Wilso Auto Dr Danb Mors
OOSE Pin Japanned	Monr Dove
Cast Joint, Narrow	Natio Em Genu Wash Welli
Train Mfg. Co. s Fancy Butts. dis 45&10 \$\) Union Mfg. Co. s Fancy Butts. dis 55&10 \$\) Quived Enameted Loose Joint dis 55&10 \$\) (icket Plated dis 53&40 \$\) (icket Plated dis 50&5 \$\) (icket Pla	Kettl Sauce Glue Tinne
" with Sil'd dis 65&5 % WHOUGHT IROW. dis 40&10 % "ast Joint, Narrow. dis 40&10 % " Lt. Narrow. dis 30&10 %	Door Brass
WILL SIT WROUGHT IRON	Fan Star. Frary Wood Wood Enter
Paimer dis 40 \$ Seymour dis 65&10 \$ Sippard dis 70&10 \$ Lull & Porter dis 40 \$ dis 60 \$ di	Fil Amer Arcae Aubu
Nicholson	Niche C. B. Helle Hisco John
Sargent's	Jowi J. & Stube Butch
Can Openers	Walt Spear W. K R. Ib Fishe Moss
Der doz \$2.50 dis 10 \$ ardine Scissors. Der doz \$7.50 dis 40 \$ cnps-Percussion, per 1000. ST @ 400 C. December 2000. ST @ 400 C. Comps-Percussion C	"Phi Lime
Capse-Percussion, per 1000	Mrs.
	Peer
ast Iron, Steel Pointsper doz \$2 00 dis 45&5 \$	Chan Empi Eure
Plate and Shallow Socket	Defia K. F.
	For Emr
Chasts C	Fa Hay,
** Brass	Fr Burn # do No.
White Orayona. # gross. 15%c net Chiness. dis 20 \$ D. R. Barton Tool Co. (all kinds). dis 20 \$ bocket Framing. Douglass, Extra. dis 80&10 \$ dis 80&5 \$	Mark Wire
White Orayons. # gross.15 %c net Chiseis.	Nail Bed Doub
" Butcher's \$5'25 to £ gold	Tinn Fam
" Newbond's	Sarg Read Hart Rick Hart
" Snow's dis 40&5 % " Hammer's dis 20 " Cabinet, Sargent's dis 60&10 % " Carriage Makers'. Sargent's dis 60&10 \$ Othes, Axie.	Hum May Henr Cher
Norway or Best dis 40 % inperior. dis 55 % Cockeves 1¼ in., 28c.; 1½ in., 38c.; 1½ in., 37c. net Cocks. Prass Racking dis 40&5 @ 45 %	Verr Mag War Hi Tow
Lock and Globe dis 40&5 @ 45 % Lever Blobs dis 40&5 % 45 % Ale and Beer dis 50 % 10 % Coffee Mills dis 25 % Board and Box dis 25 %	Prov
Increase Wilson's dis 20 %	Pe Rogi Broi
Companses and Dividers. Bernis & Cali Co.'s. dis 35&10 % Cook's. dis 15 % Excessior. dis 40 % Peck Stow & Wilcox dis 25 %	Wro Surf Flus Lifti Saw Hau N. C
Miller's Patent	N. C. Brac Hick
Corractews and Cutters. Bradley s	Soci File Aug
iron, steel points. Crucibles. —Gautier & Co. \$\Pi\times 5c\$ Curling Irons. &c. \$\frac{1}{2}\times \frac{1}{2}\times \f	Pate
Curry Combs.	Barr Nov Cha Clin
Our longs Pinching Irons Que long to the l	Hen Jug Fite Hot
American Pocket (Cutlery Co) Am. Pocket—Humason & Beckley Mfg. Codis 25 x Am. Miller Bro.'s Cutlery Codis 25 x Am. Miller Bro.'s Cutlery Codis 25 x Dippersdis 25 x	And Sarg New H
Britannia per doz 750-dis 39 5; by bbi dis 38 5; 5 Cocoa, Plaib per doz 87 52-dis 29; 13mmed per doz 875-dis 29; 13mmed per doz 975-dis 29; 5 Plog Collurs dis 20 5 Embossed Gilt. dis 20 5 Leather dis 20 5	Hun Sh
Lesther dis 30 % Brass dis 25 % Boor Springs \$ 00 82:00 net Gray's \$ 00 \$2:00 net	1 T -
Brass. dis 25% Boor Springs. dis 25% Torre; \$ 100.	New Sh Cl La Sim
Challenge (Coll)— Nov. 5 7 6 Japanued per doz \$2*00 250 350 Coppered per doz \$4'00 450 500 Gaivanized per doz \$50 4'00 450 500 Nickeled per doz \$50 6'00 700]	Sir Cl La Br
Phinadelphia 0 in , \$5.00 : 8 in , \$7.00 dis 15 9 Barker's Concealed dis 15 3 Drawing Anives dis 60.55 g	J. F
Crosman's No. 1 dis 60 c	Und Sh
Adiustable Handle dis 15 x Drills and Drill Stocks each \$2 25 net Blacksmiths each \$7 59 net Breast, P. S. & W dis 25 x Breast, Ricen's dis 25 x	C

)	ale rilices, sep	X
	Ratchet, Merrill's	E
	Ratchet, Merrill's dis 20 st dis 20	w
Contract of the last	Danbury each \$8°00, dis 30 % Morse's Beach Patent dis 30 %	G
	Rgg Benters.	Re W
	Emery Genuine Chester—Regular Nos # B 6c dis 10 4	Bo
	Wellington Mills, Grain. P b 10c. net Flour. P b 8c. net Enameled and Tinned Ware. Kettles. dis 40 @ 50 %	Sc So
	Kettles dis 40 @ 50 % Sance Fans. dis 50 @ 50 % Sance Fans. dis 50 @ 50 % Timned Sancepans. dis 50 @ 50 % Escutcheons.	So Ri Gr
	Escutcheons. Door Lock. Brass Thread. Wood. Brass Thread.	Di
	Faucets Gis 50 5 Fenn's Gis 50 5 Fenn's Gis 50 5 Gis	Bi Co Be Be
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	J. & Riley Carr. 5 00 to £ gold " Horse Rasps. 5 00 to £ gold Stuba'. 7 50 to £ gold Butcher's 4 50 to £ gold Walter Spencer & Co.'s " Dismond" 4 50 to £ gold	WH
	Spear & Jackson 5 00 to E gold W. K. & C. Peace's "Imperial" 5 25 to £ gold W. K. & C. Peace's "Imperial" 5 25 to £ gold Flasher s. 4 75 to £ gold 5 25 25 25 25 25 25 25 25 25 25 25 25 2	A
	Moss & Gamble Thos, Turner & Co. (Peter A. Frasse & Co.) 4 50 tc & gold " Horse Rasps. 500 to & gold "Philo Sheffield," P. T. Co. 500 to & gold Limet & Co. (French). 4 23 to & gold	Co Bi G N
	Mile. Coles	Pe
	5 10 each het Peerless, 4-inch Rolls	P
	" " 6 " 3 is each net " 8 " 4 90 each net Champion, 6 inch rolls 6 W each net 4 inch rolls 5 60 each net	STARR
-	" Pony. 4in., \$4.75; 5 in. \$5; 6 in. 5'9; in. \$6 dis 25 Knox, 4 inch Rolls. \$3 0 each net \$6 \$1 0 each net \$6 \$1 0 each net \$7 0 each net \$1 0	B
	Crown .45 in Roll \$3.75; 6 in. 400; 8 in. 525 each net Domestic Fluter. \$1.70 each net Gensys Hand Fluter. \$150 uper doz net Gensys Hand Fluter. dis 37½ & 40.5	MATB
	Forges. Empire" (W. P. Kellogg & Co.)	AZZSI
	Forks.	DW
	Fruit and Jelly Presses. Enterprise Mig. Co	Bi
	No. 0 1 2 4 6 6 10 5 6 6 10 5	H
	"Smith's Patent. per doz \$18'00, dis 40 \$ Glimlets. Nail and Spike. dis 25&10 \$ "Bee" Gimlets. per gross, \$12'00, dis 45 \$	CiBi
	"Smith's Patent per doz \$18'00, din 40'5 Gimlets. Nail and Spike. dis 25'&10 5' Bee "Gimlets. per gross, \$12'00, 'dis 45' 5' Double Cut, Sheparalson's per gross, \$12'00, 'dis 45' 5' " " Ives' dis 25' 5' Glue Pots. Tinned and Enameled. dis 30 @ 35 5'	D
	" Douglass" dis 25&10 x Glue Pots. Tinned and Enameled dis 30 @ 35 6 Family, How's "Eurekia" dis 23 5 Grind Stone Fixtures dis 25 5 Sargent's Patent dis 20&10 8 Heading Hardware Co dis 26 6 Hart Mfg. Co.'s dis 60&5&10 6 Hick Bros. dis 45&5 5 Hansmers.	M
	Hart Mfg. Co.'s dis 60&55.10	TPB
	Hanmers.	YDP
	Chency 8	PE
	Leg from \$6 50 per pair \$40 per doz Providence Too! Co.'s Hand Cuffs \$15 per doz Leg from 25 dis 10 5 Handles Door or Thumb Latches—	LC
	Door of Finance Latence	SMV
	Handles. Nos. 0 1 3 4 4 60 & 10 2 5 1 50 10 & 10 10 10 10 10 10 1	TL
-	Hammer and Hatchet	808
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20 00 00	File.	HANA
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	Climax No. 2 Pair \$i^*x\$, qis so \$	
-	Hatchets, -1salah Blood) I
2000	Shingding, Nos. 128. \$\psi\$ doz \$7 22 8 00 8 45 Claw, 123. \$\psi\$ doz 7 75 8 50 9 25	1
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Putnam. Ausable. National and New London. 1,000 lbs., dis 5 & Ausable. National and New London. 1,000 lbs., dis 5 & Perkins' vulcan and Globe. 500 lbs., dis 5 ; 4 & Perkins' vulcan and Globe. 500 lbs., dis 5 ; 4 & Herse Shees. Butden. \$\$ keg. \$4.62 \ks.	Ch To Sal Irc In Co
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Brass	Sia Sia Ch St St St
" Plush Tlp. " Elastic End, No. 8. # doz \$1.75 Door, Mineral # doz \$1.75 " Port. Jap d # doz \$2.55 " Plated # doz \$2.55 " Plated # doz \$2.55 " Port. Jap d # doz \$2.55 " Plated # doz \$6.75 Furniture Platu 75c gross inch, dis 10 \$	Fi Sa Se
Ladies	Be N.H.
Monroe's Patent. per dox \$4'00 dis 30' \(\) Lanterns. No.0, \$\) in \(\foatharrow 0.0 \)	Ra Ra
Linen Fishdis 30 %	CI FONWINH
Cotton Chaik Nos. 0, 1, 2, 4, \$6, 6'90, 7, 7'90, dis 20 5 Mason's dis 20 5	SID
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5	Pinking 1rons per doz \$2 75—dis \$5&10 %
S	First Quality
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N N N	De Barton Tool Co
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	Auburn Tool Co.'sdis 25 % Greenfield Tool Conet list
	D. R. Barton Tool Co
1	Pinking Irons per doz \$3 75—dis \$5&10 \$5 Pinnes and Pinne Irons. First Quality
	Plow Bits, Greenfield Tool Co
200	Piors sits, treenned Tool Co. dis 10 % Pilers and Nippers. dis 38½ % Button's Patent. dis 28½ % Edit Patent Nippers. No. 1, \$15; No. 2, \$21 \$\pi\$ doz dis 25 \$ Leach's Patent Wire Cutters. per doz \$6 50—dis 15 \$ Gas Pilers. dis 25 % Eureka Pilers and Nippers. dis 25 %
K K	Leach's Patent Wire Cuttersper doz \$6 50—dis 15 % Gas Pliersdis 25 %
8	Gas Pliers
	Plumbs and Levels. dis 60&10 %
N. N. N. N.	Standard Rule Co.'s New Adjustabledis 60&10 % Standard Rule Co.'s Non-Adjustabledis 60&10 %
8	Pocket Levels
8	Pulleys.
6	Hot House and Tackle
8	Brass Screw
N N	Davis Fatent dis 60&10 % Pulleys Judd's Axie per dox \$0.75 dis 40 % Hot House and Tackie dis 60&10 % Jap'd Screw dis 60&10 % Hrass Screw dis 60&10 % Hrass Screw dis 60&10 % Jap'd Side dis 60&10 % dis 60&10
1	Pumps. new list dis 25 g Douglas Cistern, etc new list dis 20 g Union Mfg. Co's. Cistern and Pitcher dis 25 g """ """ <t< td=""></t<>
5 5	Union Mrg. Co's. Cistern and Pitcher
K K	
0	Belt or Drive per doz \$2.00; \$2.25; \$2.50 dis 25 @ 90 % Spring per doz \$6.50—dis 25&10 % "Lesch's Patent dis 15 % "Bemis" dis 30 %
c	Raii.
c	Skaii
e	** for N. E. Hangersdis 60&10&10 %
c	Cast Steel
c	Malieabledis 40 %
e	Razer Straps.
CCS	
×	Chapman dis 10 @ 15 % Torrey's dis 10 & 10 %
*	Rivers
8	Rivets, dis 60 @ 65 % in bulk dis 40 @ 50 % Copene Rivets and Burrs dis 20 % Sos 7 8 9 10 11 12 13 14 15 Per lb 496 506 526 506 600 656 700 Rivet Sots dis 10 % dis 1
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ic	Rivet Setsdis 10 s
t %	Road and Levee Scrapers. Doty's Revolving
et	Rodes Stair dis 40&10 c
8 8	Barn Door
36	Manila
35	" Tar'd Rope
×	"Hay Rope. \$\frac{1}{2}\text{ inch and larger \$\pi\$ \$\frac{1}{2}\text{ for the larger \$\pi\$ \$\pi\$ \$\frac{1}{2} for the larger \$\pi\$
XXX	Signal
% Ty	Raies Boxwood, Ivory. Chapin's dis 60&10 % dis 50&10 %
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*	Sad Irona. From 4 to 10 lbs.
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THE PROPERTY OF STATES AND A STATES OF STATES AND STATE	Beader & Adamson's Fint, 00 to 15, 18 25 weam 2,25,45, 3 475 da 2,25,45, 3 475 da 3,25,45,3 475 da
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THE WALL STREET OF THE PROPERTY OF THE PROPERT	Beader & Adamson's Fint, 00 to 15, 18 23 we ream 2,25,45, 475 da 2,25,45, 475 da 2,25,45,475 da 3,25,45,475 da 4,25,45,475 da 4,25,45,45,45,45,45,45,45,45,45,45,45,45,45

September 28, 1876.	
Nettlefold's Brass	Wringers. Less than 2 doz 2 doz lot Providence, with Cog Wheels. 67:00 \$7:00 Household, without 60:00 Universal, 67:00 Universal, 67:00 Too Too Too Too Too Too Too Too Too T
Nettlefold's Brass	Household, without 60'00 58'00 Universal, 60'00 58'00 70'00 70'00
Hand Rail, Sargent'sdis 55&10 g	Rureka, without 60.00 58 00 Novelty, 980.00 \$58.00
mcythen	Sherman, " 72'00 70'00
Silver " Grain \$\overline{\phi}\$ doz 12 00 dis \$1.50 dis \$1.50 dis \$1.50 from list	Excelsior Bench Wringers. 90 00 87 0 Excelsior Bench Wringers. 90 00 87 0 for Set Tubs. 82 00 79 0
Blood's Excelsior and Granger# doz 11 00 dis \$1:50 Young America	Stamped Tin Ware.
Blood's German Steel, Grass \(\psi \) dos \(\psi \) dos \(\psi \) (0) \(\psi \) silver \(\psi \) dos \(\psi \) (0) \(\psi \) dos \(\psi \) (0) \(\psi \) dos \(\psi \) (0) \(\psi \) dos \(\psi \)	Stamped Tin Ware. Common Stamped Ware
Strike Snaths	Planished Tin Ware
Shears and Scissors dis 50cio Cast Steel dis 50cio Gast Ireo dis 40 f Seymour's Straight Trimmers dis 50cio Gast Ireo dis 50cio Seymour's Scissors dis 50cio Gast Ireo Gas	METALS.
Pruningper doz \$\$5.50 @ 6.00, net Barnard's Lamp Trimmersper doz \$8.78	BONDuty Bars, 1 to 1% cents per lb., Sheet, Band
Sheaves. Sheaves. Sheaves. Sheaves. Shiding Dor, M. W. & Co. list dis 36&5&2 %	18 0N.—Derr Bars, I to 1% cents per lb Sheet, Band Hoop and Scroll, 1% to 1% cents per lb. Provided, tha none of the above from shall pay a less rate of dut than 35 per cent. Pig. 47 per ton; Pollshed Sheets, cents per lb.: Wrought Scrap, 85 per ton. Cast Scrau 46 per ton. Ralirond, 70 cents per 100 lbs. Boiler an Plate. 1% cents per lb.
Patent Roller	#6 per ton.; Wrought Scrap, #8 per ton; Cast Scrap #6 per ton. Railroad, 70 cents per 100 lbs. Boiler an Plate. 1 1/2 cents per lb.
Sliding Shutter, R & E. List	Foundry No. 1 F top. \$22 00
Shovels and Spades. Ames	Gray Forge " 19 00 @ 30 0
Row land's dis 25 %	Cotness
Shove is and Tongs. Iron and Brass Head, i. & E. list.	Am. Renned. at mill225c. @ 235c
Minten	Com American Committee of the
Square Frames, Round Cornered, by casedis 70 % Less than a case	Common iron Bur Iron irom Store,
North Carolina Handle Co	% to 2 in. round and square \$ to 6 in. x % to 1 in
Spake Shaves	\$\times to 6 \text{ in round and square}\\ 1 to 6 \text{ in x \$\frac{1}{2}\$ to 1 \text{ in.}\\ 1 to 6 \text{ in. x \$\frac{1}{2}\$ to 1 \text{ in.}\\ 1 to 6 \text{ in. x \$\frac{1}{2}\$ to 1 \text{ in.}\\ 1 to 6 \text{ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 \text{ in \$\text{ in to \$\frac{1}{2}\$ in. x \$\frac{1}{2}\$ to 2 in to \$\text{ in t
Spoke Trimmers. Bonney.s	Rods—% and 11-16 round and square. # 15 2-66 Bands—1 to 6 x 12 to 3-16. # 15 2-96
Spoke Trimmers.	Swedish Iron. Ordinary sizes
Douglass	Sheet Iron. Common R. G. American. American
Basting dis 10 8 Britannis dis 55 @ 60 \$	Sheet Iron. R. G.
Rogers & Bro. A 1 dis 40&5 € Reed & Barton dis 40&5 € Barby Silver to	27
Holmes, Booth & Haydens dis 40&5 % Nickel Silver Co. dis 30 % German Silver	21 to 24
Tin (P. S. & W.)— Teas. \$1.50 \$\pi\$ gross, net	Patent Platisbed
Tin (Cowles Hdw, Co.)	Stained. No. 1
Stocks and Dies	One piece Corrugated Sneet from Ethows. OHABOOAL IRON. 5 54 6 7 inch. 82:50 3:50 4:50 5:25 6:50 per doz
None	\$2:50 3:50 4:50 5:25 6:50 per doz
Washita Stone No. 1, W to 30c net	7500 700 950 1200 1400 per doz COPPER -DULY Pig, Bar and Ingot, 5c. old copper 4 cents # 5; Manufactured (including all articles of
Arkansas Stone	valorem.
Stave Pollub	American Ingot 20 @ 20%
Joseph Dixon**	Braziers Copper, ordinary sizes, over 16 oz., per square 1001
Squares. dis 50 %; full cases, dis 50&10 %; Nickel Plated dis 50 %; full cases, dis 50&10 %; Nickel Plated dis 50 %; full cases, dis 50 %; dis 30 %; dis	square 100. Bræzlers Coppei, ordinary sizes, 16 oz. and over 12 oz., per square foot. Bræzlers Coppei, 20x, per square foot. Griele less than 84 incn in diameter. S6c.
Nickel Plated	Cymalog 841nch diameter and over 98c "
Star Try Squares and Development Star Try Squares No. 1	Segment and Pattern Sheets
	Rolt Copper
Tacks, Half Weight, American	
Tacks Hyra % & C. — List of January 1, 176. Tacks Half Weight, American dis 75&	case. Sc. ♥ sheet For less than a case. Sc. ▼ sheet Tinning Sheets, ordinary sizes. Skc. ▼ sq. ft For tinning both sides, double the above amount.
"Copper. \$ \$ \$5c. dis Brads, Half Weight. dis 50oc Shoe Nalis—	O'NEILL'S PATENT PLANISHED COPPER. 14 and 16 oz. and heavier
## 3	12 oz. and lighter
Ton Harara	
Common and Ring	14 and 16 oz. and heavier
Tapes, Mensuring. American Flash and Cap Co	Brown & Sharp's Gauge the Standard except for Fund Wire.
Tea Trays. American Tea Tray Co	BRASS MANUFACTURERS' PRICE LIST. October 27th, 1875. Net cush prices for Roll and Sheet Brass, Wire, &c., for
Thermometers. Tin Casedis 60 @ 60&5 \$	quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional. HIGH BRASS
Toe Calks. Winsted	All Nos. to No. 28, and widths 14 in. and under
Tobacce Cutters, Enterprise Mfg. Co. (Champion) dis 20 s.	
Nashua Lock Co.'s	All Brass thinner than No. 38 is Platers' Brass. at45c Sheets 24xi8 in. and all sheets cut to particular sizes and lengths
Traps. Game, Newhouse	Sheets wider than 30 in and under 40 in
** Peck, Stow & Wilcox	Circulas sheets, in diam. from 4 in. to 14 inclusive
Fatent Choker (Union Nut Co.)	
Hiske's Fatent dis 30 c	Four cents * b more than High Brass. Gilding Metal 7c, * b more than High Brass.
Catch-em-alive) Flaned or Folished
Disston's Brick and Plastering	Metal, in width 2 in. to 34 in. to No. 30, inclusive, ie. per B. advance.
Trowels. Color	Metal, in width 2 in. to 1 in., thinner than No. 30, 2c. per B. advance. Metal, in width 1 in. to 1/2 thinner than No. 30, 3c. per B.
Butter and Cheesedis 25 %	advance. Metal, in width 36 in. to 36, to No. 30, 2c. per 35. advance. Wetal in width 36 in to 86 thinner than No. 30 5c. per 35.
Nickel and Giltper dozen \$16.00 @ 19.00 ¥ ises Solid Box, Trenton	Metal, in width ¼ in. to ¼ thinner than No. 30, 5c. per m. advance. Metal, ¼ in. in width and less, 10c. per lb. advance
Wilson's	GERMAN SILVER MARKET METAL AND WIRE 4 per cent., 12 in., to No. 26
Nickel and Gilt	6 " " " " " 70 90 110 " " " 150 110 115 " " 1100 1.85 110 110 1.85
Trenton dis 20 %	18 " " 110 1:50 20 " 1-20 German Silver Sheets over 12 in. wide, and weighing
	more than 16 ms., \$2 per m., net. Advance 2c. for each additional in., in width above 12 in., and 2c. per m. on each No. thinner than Nos. 26 to 36
Stevens	Soc. per B. additional.
Wheel Barrows. per doz \$17:50 dis 10 % Canal (Pugsley & Chapman). new list dis 30	German Silver Scrap one-third less than met price of 12 in. Market Metal. German Silver Turnings, Filings and Chipa, half the price of Scrap.
Wheel Barrows.	
Wire. Brass and Copper. List of Oct. 27, 1875, net	Nos. 0 to 20
Wire. Brass and Copper. List of Oct. 27, 1875, net Brass and Copper. Nos. 0 @ 18 dis 50 @ 32 % s 19 @ 28 dis 55 @ 37 % g 27 @ 36 dis 57 % @ 65 Coppered. 27 @ 36 dis 45 @ 47 % g Galvanized, Nos. 10 to 18. market list dis 15 @ 30 % 37 % s Tinned. dis 30 @ 32 % s	BRASS AND COPPER WIRE. Gild g and
Coupered. "0 @ 18 dis 45 @ 47 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Fancy Wire not less than 4 cents per pound advance of Round Wire. Spring Wire, 2 cts. per lb. advance.
Cast Steel	FINE WIRE, BY THE OLD ENGLISH FINE WIRE GAUGE. Gild'g and
uaivanized Telegraph, Nos. 8 and 9 * \$ 906 4 jalvanized Telegraph. Nos. 10 and 11 * \$ 106 12 * 1096c	No. 26
Gaivanized, Nos. 10 to 18. market list dis 15 @ 20 % Tinned dis 20 @ 20 % € Cast Steel dis 15 @ 20 % € Cast Steel dis 15 @ 20 % Tinned Broom Wire dis 55 @ 40 % Tinned Broom Wire dis 55 @ 40 % Gaivanized Telegraph, Nos. 10 and 11 \$\psi\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	No. 26
Stune Steel Wire	NO. 31
Wrenches, American Adjustable dis 45 5 Baxter's Adjustable "S" New List, May 1, 76 dis 30 5	No. 35
Wreaches	No. 38
Pattern (Wrought)	Plain to No. 20 inclusive, above \(\) in, to 3 in. \(\) 44 above 3 in. \(\) 50 Nos. 21, 22, 23, two cents advance on List for each Number. \(\) Nos. 24, 25, 26, four cents advance on List for each Number. \(\) Number. \(\) 24, 25, 26, four cents advance on List for each Number. \(\) 24, 25, 26, pocial rates. \(\) Plain \(\) 4 inch. \(\) 79
Hull & Belden's "Climax" dis 25 % Linesay's Patent. dis 26 % Linesay's Patent. dis 26 % Cart's Pattern. dis 70-610 &	Nos. 21, 22, 23, two cents advance on List for each Number. Nos. 24, 25, 26, four cents advance on List for each
Davis 'atent Dupiex	
Merrick's Pattern dis 2562% Sign Pring's Patent dis 2065 % Aiken's Pocket (Bright)per doz \$10'00—dis 502:10 %	3-16 1-10

	THE IRON AGE
2 doz 8 doz lota 72:00 870:00 50:00 55:00 50:00 55:00 72:00 70:00 50:00 56:00 50:00 56:00 50:00 70:00 70:00 70:00 70:00 70:00 70:00 70:00	Prices. Fancy Tubing, 4 cents advance on List above Plain. English, Scotch and Extra Patterns Fancy Tubing to No. 20, 9 cents above Plain. Tubing Sawed or Cut 2 to 4 feet long, 2 cents advance on List. Add to 2 cents \(\)cent for each additional cutting under two feet.
60°00 58°00 89°00 67°00 82°00 87°00 52°00 79°00 50°00 58°00	Plain. 28 Fancy 31
dis 10 =dis 20 =dis	4 Per cent 88 88 88 98 98 98 19 19 19 19 19 19 19 19 19 19 19 19 19
r lb., Sheet, Band,	20 " 1.65 MISCELLANEOUS. 29 Common Plain Brase Pail Ears. 29 Hose Pipes, 500 and over 21
b. Provided, that less rate of duty collahed Sheets, S ton; Cast Scran, 0 lbs. Boiler and	Low " 18 cents.
ton, \$22 00 20 00 19 00 30 00 28 50 27 50 36 50	ANTIMONY 17 @ 171/c. currency
** 26 50 2*25c. @ 2*35c. ** ton 35 60 @ 40 00 ** 21 00	
26 00 @ 27 00 **. P % 2 26	
1½ to 2.34 % 27c 2.34 % 27c 2.6c 2.6c 2.6c 2.6c 2.6c 2.6c 2.6c 2.6	SOLDER. Vo. 1. 18c.; No. 2. 12%c STEEL—DUTY: Bars, ingots, Sheets and Colls, valued at 7 cents perib., or under, 2% cents; over 7 cents, and not above 11, 3 cents per 1b. over 11, 3% cents per 1b. and 10% ad val. Rallway Bars 1% cents per 1b. Rallway Bars, in part Steel, 1 cent per 1b. Provided, that Metal cemented, cast or made from iron by the Beasemer or pneuma. c process, of whatever form or description, shall b classed as
R. G. American. 4%c 4%c 5%c 5%c 5%c 5%c 1 quanty # m 7%c	Tool.
quality # n 7/4c 8 c 8 c 8 c 9/4c 10 c B, 10c. # n 12/4c 12/4c 10c ws.	Tool
7 inch. 6.50 per doz.	English Steel,—payable in gold, net. Best Cast. # b 17%c Kxtra Cast. 18%c Round Machinery, Cast # b 10% @ 11%c
14.00 per doz. 5c.: old copper, in all articles of ef value) 45 % ad > 20 @ 20%c	Bwaged, Cast
BOLTS, &O. 6 OZ., per	Best Double Shear 1734 Blister, lat quality 1436 German Steel, Bet quality 13 c German Steel, Bet quality 13 c 2 d quality 1056 Sheet Cast Steel, 1st quality 1436 Sheet Cast Steel, 1st quality 1436 Steel, Flat and Astonia 1256 Square and Kound 1256 Mill. 1356 Taper to 4 inch. 156 BPELTER—DUTY 1 In Figs. Bars and Plates, \$1 50
	"Taber S and Sk Inch "ISc **PELTER—DUTY: In Figs, Bars and Flates, \$1.50 **per 160 lb & Duty: In Figs, Bars and Flates, \$1.50 **per 160 lb & Duty: In Figs, Bars and Flates, \$1.50 **All C. Currency **TIN—DUTY: Flates, Bacets, Tagger and Terme, Fig. Por lb., Electro-galvanized Flates, \$1 cents per b., per lb., Electro-galvanized Flates, \$1 cents per b., Bars, Block and Figs, free, Banca, subject to duty of 10 per cent.
	per bi. Electro-gaivanized Piates, 2 cents per b. Manufactures of, not enumerated, 35 per cent. ad val. bars, block and Pigs, free. Banca, subject to duty of 10 per cent. Bancs. \$\partial 25c., currency Straits. \$\partial 25c., currency Straits. \$\partial 25c., currency Straits. \$\partial 25c., currency Straits.
2) (c. # sq. ft e amount. COPPER. the case, SSC. # To 390, as	1 C 10x14 12x12 Prime Charcoal
, 14x60 he case, 38c. # 3 s wide.) 41c. # 3	14229 1 1750 G 10 15 D C 123 x 17 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
d except for Fine	1 C 12x12
ober 27th, 1875. s, Wire, &c., for one time. For ional. under	I C 20x200 21:75
s. 28 to 58, in- Brass. at45c rticular sizes	Paper Stock Old Metals A.c.
#0c 40c 42c inclusive 87c 40c 42c 46c 46c	(Destant Gatter Proces
Brass	Kentucky bagging5% 65%
nclusive, 1e. per n No. 50, 2c. per No. 30, 3c. per 1b.	Oakum jung, No. 1
No. 30, 5c. per m. ad- no. 30, 5c. per m.	No. 2
AND WIRE et Metal. Wire \$0.60 \$0.80 \$0.80 \$0.00 \$0.	Book Stock, Mixed
width above 12 han Nos. 26 to 36	Commons.
	Copper California Califor
Gild g and w Brass. Cop'r. 0-34 0-40 0-35 0-43 0-36 0-43 0-40 0-46 0-44 0-50 pound advance	Tea load.
Gild'g and w Brass. Cop'r. 0-45 0-51	Paints, Oils, etc.
0·50 0·56 0·58 0·58	Biack lamp—Coach Painters 9 20c
773 1.08 983 1.15 98 1.28 1.38 1.58	Prory Drop, fair. Sc Sec Sec

Brown, Spanish.

Brown, Spanish.

Van Dyke...

Carmine, 40...

Green. Chrome...

Paris.

1 paris.

1 in oil.

Mineral Paints.

	-
Е.	27
Rose Pink	Grm, Copal.
PRATTI	Discount 50& 15 %.
Hardware & Iron Men	rchants, Buffalo, N. Y.
These Nalls are superior, being made with new and imbest brands of Norway Iron. Orders solicited from the Trade G. B. WALBRIDGE &	14
THE PALACE	COAL VASE.
Three Patterns.—Two MOST POPULAR GO Illustrated Price Lists supplied upon application. SOLE MANUF	OODS IN MARKET.
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lo, N. Y. New Model Swivel Vise.



ordinary patterns is in the case with which it is adjusted to whatever angle may be required.

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17 a 4c

18 a 55c

18 a 55

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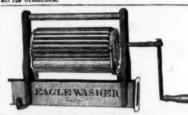
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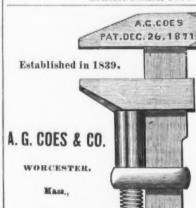
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### Bastard ### £ gold \$4 75 @ \$4 50 ### Bastard ## £ gold \$4 75 @ \$4 50 ### Bastard ## £ gold \$4 75 @ \$4 50 ### Bastard ## £ gold \$4 75 @ \$4 50 ### Bastard ## £ gold \$4 75 @ \$4 50 ### Bastard ## £ gold \$4 75 @ \$4 50 ### Bastard ### \$2 00 ### \$2 00 ### \$3	Rivete—Iron. Black and Tinned Screws—"American screw Co". Flat Head, Iron. Flat Head, Bron. Sleves—Wood, Hoop Iron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co. Kitchen.
### Bastand ### ### ### ### ### #### ### ### ###	Rivete—Iron. Black and Tinned Screws—"American screw Co". Flat Head, Iron. Flat Head, Bron. Sleves—Wood, Hoop Iron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co. Kitchen.
### Bastard ### E gold \$4 75 @ \$4 50 ### E gold \$4 50 #	RIVER—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Flat Head, Fron. State and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States House States House By the Case. States House House States House By Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Takes—Half Weight Am. Iron Tea Trays. Thermometers—Tin Case. Toole—Tinmens'
### Bastard ### E gold \$4 75 @ \$4 50 ### E gold \$4 50 #	RIVER—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Flat Head, Fron. State and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States House States House By the Case. States House House States House By Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Takes—Half Weight Am. Iron Tea Trays. Thermometers—Tin Case. Toole—Tinmens'
### Bastard ### & gold \$4 75 @ \$4 50 ### Bastard ### & gold \$4 75 @ \$4 50 ### Bastard ### & gold \$4 75 @ \$4 50 ### Bastard ### & gold \$4 75 @ \$4 50 ### Bastard ### & gold \$4 75 @ \$4 50 ### Bastard ### & gold \$4 75 @ \$4 50 ### \$2 00 ###	RIVER—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Flat Head, Fron. State and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States House States House By the Case. States House House States House By Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Takes—Half Weight Am. Iron Tea Trays. Thermometers—Tin Case. Toole—Tinmens'
## Bastard ## E gold \$4 75 @ \$4 50 ## E gold \$4 75 @ \$	RIVER—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Flat Head, Fron. State and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States House States House By the Case. States House House States House By Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Takes—Half Weight Am. Iron Tea Trays. Thermometers—Tin Case. Toole—Tinmens'
### Bastard ### E gold \$4 75 @ \$4 50 ### E gold \$4 75 @ \$5 50 ### E gold \$4 50 ### E gold \$5 60 ###	RIVER—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Flat Head, Fron. State and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States and Straps—White's. Spoons, Iron Tinned. States House States House By the Case. States House House States House By Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Takes—Half Weight Am. Iron Tea Trays. Thermometers—Tin Case. Toole—Tinmens'
## Bastard ## £ gold \$4 75 @ \$4 50 ## Taper ## £ gold 4 75 @ \$	Riveta—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Stress—Rood, Hoop Iron. Stfters—Ash. States and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Rogers' A No. 1 Britannia. G. S. Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Tracks—Half Weight Am. Iron. Tea Trays. Thermometers—Tin Case. Tools—Tinmens'. Vascs—Parallel, Buffalo. Wares—French, Tinnea and Iron. Stamped and Jasanned. Cast Iron. and Copper. Wire—Bessemer Steel. Wringers—Novelty. Stop 13x28. Sto
## Bastard ## £ gold \$4 75 @ \$4 50 ## Taper ## £ gold 4 75 @ \$	Riveta—Iron. Black and Tinned Screws—'American Screw Co'— Flat Head, Fron. Stress—Rood, Hoop Iron. Stfters—Ash. States and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Rogers' A No. 1 Britannia. G. S. Hall, Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Dixon's. Fairbanks. Stove Polish—Gem. Tracks—Half Weight Am. Iron. Tea Trays. Thermometers—Tin Case. Tools—Tinmens'. Vascs—Parallel, Buffalo. Wares—French, Tinnea and Iron. Stamped and Jasanned. Cast Iron. and Copper. Wire—Bessemer Steel. Wringers—Novelty. Stop 13x28. Sto
## Bastard ## £ gold \$4 75 @ \$4 50 ## Taper ## £ gold 4 75 @ \$	Riveta—Iron. Black and Tinned Screws—American Screw Co"— First Head Brass. Sleves—Wood, Hoop Iron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Hogers' A No. 1. Britannia. G. S. Hall, Elton & Co. Scales—Burlalo Scale Works. Fairbank. Stove Iolish—Gem. Palace. Fairbank—Gem. Palace. Fairbank—Hem. Tres—Half Weight Am. Iron. Tres—Tays. Tres—Tays. Tres—Tays. Thermometers—Tin Case. Tools—Tinnens. Vascs—Parallel, Buffaio. Ware—French. Tinnen and Iron. Stamped and Jananned. Cast Iron Hollow. Wire—Brass and Copper. Wire—Brass and Sopper. Wire—Brass and Sopper. Wire—Brass and Sopper. Wire—Brass and Copper. Wire—Brass and Sopper. Wire—Bras
## Bastard ## E gold \$4 75 @ \$4 50 ## E gold \$	RIVER—ITON. Black and Tinned Screws—American Screw Co"— Flat Rod. Brass. Sleves—Wood, Hoop fron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. Stress—Wood, Hoop fron. Tinned. Stress—Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Rogers' A No. 1. Britannia. G. S. Hall. Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Folish—Bixon's. Fairbanks. Stove Folish—Bixon's. Fairbanks. Stove Folish—Tinned Co. Scales—Buffalo Scale Works. Fairbanks. Tools—Tinnens. Fairbanks. Tools—Tinnens. Termoneters—Tin Case. Tools—Tinnens. Vascs—Parallel, Buffalo. Ware—French. Tinnen and Iron. Stamped and Jananned. Cast Iron Hollow. Wire—Brass and Copper. Wire—Brass and Copper. Wire—Besseurer Steel. Tinnens. Tinnens
## Bastard ## E gold \$4 75 @ \$4 50 ## E gold \$4 50 ## E gold \$4 75 @ \$4 50 ## E gold \$	RIVER—Iron. Black and Tinned Screws—American Screw Co"— Flat Read Tons. Screws—Vamerican Screw Co"— Flat Read Tons. Sidevs—Wood, Hoop Iron. Tinned. Sifters—Ash. Sieves—Wood, Hoop Iron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Rogers' A No. 1. Britannia. G. S. Hail. Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Folish—Gem. Dixon's. Farons, Straits—Affection. Farons, Straits—Affection. Trea Trays. Thermomer. Tin Case. Treament. Treament. Treament. Thermomer. Tinned and Iron. Stamped and Jananned. Cast Iron Hollow. Wire—Bras and Copper. Wire—Bra
## Bastard ## E gold \$4 75 @ \$4 50 ## E gold \$4 50 ## E gold \$4 75 @ \$4 50 ## E gold \$	RIVER—Iron. Black and Tinned Screws—American Screw Co"— Flat Read Tons. Screws—Vamerican Screw Co"— Flat Read Tons. Sidevs—Wood, Hoop Iron. Tinned. Sifters—Ash. Sieves—Wood, Hoop Iron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Rogers' A No. 1. Britannia. G. S. Hail. Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Folish—Gem. Dixon's. Farons, Straits—Affection. Farons, Straits—Affection. Trea Trays. Thermomer. Tin Case. Treament. Treament. Treament. Thermomer. Tinned and Iron. Stamped and Jananned. Cast Iron Hollow. Wire—Bras and Copper. Wire—Bra
### Bastard ### E gold # 75 @ \$4 50 ### E gold # 75 @ \$5 50 ### E gold # 75 @ \$7 30 ### E gold # 75 @	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - Fist Head, From. State Head Stitters - Ash. Shown, Iron Tinned. States and Straps - White's. Spoons, Iron Tinned. States and Straps - White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Put Head Stitters - Ash. Shown, Iron Tinned. S. S. & Co., Ritchen. Plated Rogers' A No. 1. Britannia. G. S. Hail, Elton & Co. Scales - Buralo Scale Works. Fairbanks. Stove Polish - Gem. Head From Head. Brown, Farshaks. Stove Polish - Gem. Head From. Head From. Head From. Head. H
### Bastard ### E gold # 75 @ \$4 50 ### E gold # 75 @ \$5 50 ### E gold # 75 @ \$7 30 ### E gold # 75 @	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - Fist Head, From. State Head Stitters - Ash. Shown, Iron Tinned. States and Straps - White's. Spoons, Iron Tinned. States and Straps - White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Put Head Stitters - Ash. Shown, Iron Tinned. S. S. & Co., Ritchen. Plated Rogers' A No. 1. Britannia. G. S. Hail, Elton & Co. Scales - Buralo Scale Works. Fairbanks. Stove Polish - Gem. Head From Head. Brown, Farshaks. Stove Polish - Gem. Head From. Head From. Head From. Head. H
### Bastard ### E gold # 75 @ \$4 50 ### E gold # 75 @ \$5 50 ### E gold # 75 @ \$7 30 ### E gold # 75 @	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - Flat Reves - Iron. Black and Tinned Screws - American Screw Co" - Flat Reves - Wood, Hoop Iron. Tinned. Sitevs - Wood, Hoop Iron. Tinned. Sitevs - Wood, Hoop Iron. Tinned. Sitevs - Wood, Hoop Iron. Tinned. S. S. & Co., Kitchen. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Rogers' A No. 1. Britannia. G. S. Hail. Elton & Co. Scales - Burialo Scale Works. Fairbanks. Stove Folish - Gin. Tinned. Farons, \$3°, Squeezers - Lemon, Porcelain. Tacks - Haif Weight Am. Iron. Tea Troys. Fairbanks. The Cast. Trols - Tinneds - Tinned and Iron. Stamped and Jananned. Cast Iron Hollow. Ware - French. Tinned and Iron. Stamped and Jananned. Cast Iron Hollow. Wire - Brass and Copper. Stall. Stoley. Stole
## Bascard ## \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - Free Screws - Free Screw
## Bastard ## ## ## ## ## ## ## ## ## ## ## ## ##	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - First itsed. Brass. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - White's. Spoons, Iron Tinned. S. S. & Co., Richen Puted floogers' A No. 1. Britannia. G. S. Hall Elon & Co. Scalibanks. Scale Works. Fairbanks. Scale Works. Fairbanks. Scale Works. Fairbanks. Stove Polish - Gem. Dixon's. Palace . Firbanks. Squeezers - Lemon, Porcelain. Tacks - Half Weight Am. Iron. Tea Trays. Thermometers - Tin Case. Tools - Tinnens. Vasce - Parallel, Buffaio. Ware - French. Tinnea and Iron. Stamped and Jananned. Ware - French. Tinnea and Iron. Stamped and Jananned. Ware - French. Tinnea and Iron. Stamped and Jananned. Wire - Bessemer Steel. Wringers - Novelty Fig. 14, 220. (25, 21, 22). (25, 21, 23, 22). (25, 21, 23, 23). (25, 21, 23, 23). (25, 21, 23, 23). (25, 21, 23, 23). (25, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23). (26, 21, 23, 23, 23). (26, 21, 23, 23, 23, 23, 23, 23, 23, 23, 23, 23
## Bastard ## ## ## ## ## ## ## ## ## ## ## ## ##	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - First itsed. Brass. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - Wood, floop iron. Tinned. Siters - Ash. Sieves - White's. Spoons, Iron Tinned. S. S. & Co., Richen Puted floogers' A No. 1. Britannia. G. S. Hall Elon & Co. Scalibanks. Scale Works. Fairbanks. Scale Works. Fairbanks. Scale Works. Fairbanks. Stove Polish - Gem. Dixon's. Palace . Firbanks. Squeezers - Lemon, Porcelain. Tacks - Half Weight Am. Iron. Tea Trays. Thermometers - Tin Case. Tools - Tinnens. Vasce - Parallel, Buffaio. Ware - French. Tinnea and Iron. Stamped and Japananed. Ware - French. Tinnea and Iron. Stamped and Japananed. Ware - French. Tinnea and Iron. Stamped and Japananed. Wire - Bessemer Steel. Wringers - Novelty \$72 (0) (1422) (2) (2) (2) (2) (2) (2) (2) (2) (2)
## Bastard ## E gold \$4 75 @ \$4 55 ## 15 Bastard ## E gold \$4 75 @ \$4 55 ## 15 gold \$4 55 @ \$5 ft 10 gold \$5 @ \$5 ft 10 gold \$5 @ \$5 ft 10 gold \$5 ft 10	Rivetae—Iron. Black and Tinned Screws—American Screw Co"— Flat Read. Brass. Sleves—Wood. Hoop fron. Tinned. Sifters—Ash. Sleves—Wood. Hoop fron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Rogers' A No. 1. Britannia. G. S. Hall. Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Folish—Gran. Faron.
## Bastard ## E gold \$4 75 @ \$4 55 ## 15 ## 15 ## 25 #	RIVERS - Iron. Black and Tinned Screws - American Screw Co" - First itsed. Brass. Sieves - Wood, floop iron. Tinned. Sifters - Ash. Sieves - Wood, floop iron. Tinned. Sifters - Ash. Sieves - Wood, floop iron. Tinned. Sifters - Ash. Shades - White's. Spoons, Iron Tinned. Sifters - Ash. Shades - White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated floogers' A No. 1. Britannia. G. S. Hall. Elton & Co. Scales - Buffalo Scale Works. Fall ball. Elton & Co. Scales - Buffalo Scale Works. Fall ball. Elton & Co. Scales - Buffalo Scale Works. Fall ball. Elton & Co. Scales - Buffalo Scale Works. Fall ball. Elton & Co. Scales - Buffalo Scale Works. Fall ball. Elton & Fall Scale Works. Fall ball. Elton & Co. Scales - Buffalo Scale Works. Fall buffalo. Tea Trays. Thermometers - Tin Case. Tools - Tinned and Iron. Tea Trays. Thermometers - Tin Case. Tools - Tinned and Iron. Stamped and Janaanned. Cast Iron Hollow. Ware - French. Tinned and Iron. Stamped and Janaanned. Cast Iron Hollow. Wire - Brass and Copper. See Sol. 14x20. 12x12. 2x12. 2x12. 2x12. 2x12. 2x12. 3x0. 3x0. 3x14. 3x0.
## Bacter's #ill. ## £ gold \$4 75 @ \$4 55 Butcher's #ill. ## £ gold \$4 75 @ \$4 55 Taper ## £ gold \$4 75 @ \$4 55 Flating Machines. ## £ gold \$4 75 @ \$4 55 ##	Riveta—Iron. Black and Tinned Screws—American Screw Co"— Flat Read. Brass. Sleves—Wood. Hoop fron. Tinned. Sifters—Ash. Sleves—Wood. Hoop fron. Tinned. Sifters—Ash. Skates and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Kitchen. Plated Rogers' A No. 1. Britannia. G. S. Hall. Elton & Co. Scales—Buffalo Scale Works. Fairbanks. Stove Folish—Blixon's. Fairbanks. Squeezers—Lemon, Porcelain. Tacks—Half Weight Am. Iron. Stamped and Jananned. Cost Tron Hollow. Wire—Brass and Copper. Wire—Beaseuner Steel. Wringers—Noveity. Wringers—Noveity. Fig. Tin Planes—Add 1920 14220. Tin Planes—Add 1920 14220. Tinned. Spoil Wire—Straits. Bar Tin. Solder—No. 1, Crook's. No. 1 Star. Sheet Zhac— Lasaile. Sheet Bar Tin. Solder—No. 1, Crook's. No. 1 Star. Sheet Zhac— Lasaile. Sheet Fon. Tinned Broom, 1 Nos. 20 21 Coppers—Sheathing 14 gs 18 oz. Planished. Gen. Russia, No. 1 stained. Tinned Broom. 24 W. D. Wood & Co., Smooth Fin Planished. Gen. Russia, No. 1 stained. Fig. Tin. Grean. Gelvanized.
## Batcher's Mill. ## £ gold \$4 75 @ \$4 55 @ \$	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
## Batcher's Mill. ## £ gold \$4 75 @ \$4 55 @ \$	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
## Bastard ## 2 gold \$4 75 @ \$4 55 ## 55 #	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
## Batcher's Mill. ## £ gold \$4 75 @ \$4 55 ### Batcher's Mill. ## £ gold \$4 75 @ \$4 55 #### Taper ## £ gold \$4 75 @ \$4 55 ###################################	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
## Batcher's Mill. ## E gold \$4 75 @ \$4 55 ## Spoint \$4 00 net	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
## Bastand ## \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	RIVELE—ITON. Black and Tinned Screws—American Screw Co"— Screws—American Screw Co"— First itead Brass. Sieves—Wood, Hoop fron. Tinned. Sifters—Ash. Sictes and Straps—White's. Spoons, Iron Tinned. S. S. & Co., Ritchen. Plated Riogers' A No. 1. Britannia.
Butcher Mill W & Sold \$4 75 @ \$4 55	Rivers
Butcher Mill W & Sold & 15 @ \$1 50	Rivers
## Batcher* Butcher*	Rivers
Butcher Mill W & Sold & 15 @ \$1 50	Rivers

Saws,—Disaton's Cross Cut, No. 1
Boynton One-Man Cross Cut Saws
Kowland's Plain Back dis 474 4
Back Strap
Sad Irons.—Richmond (pollshed face)per lb. 3%c Richmond (pollshed face) by the cask ** 3
Stone.—Arkansas Oli, No. 1
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United States and others in Combination
Plated
Plated
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SpringsGray's Door.
Try Squares Winterbottom dis 10 @ 15 % Stanley Rule and Level Co dis 45 % 10 % Willis Thrail , No. 2 dis 30 % 10 % dis 30 % 10 %
Tacks, dccHalf Weight Tacksdis 75 @ 75&10 4
Trunk, Clout and Finishing Nailsnet to 10 g
Trunk, Clout and Finishing Nails net to 10 g Traps.—Genuine Onetda—Newhouse list dis 23&2 g Im. Onetda—Newhouse list (1st qual.) dis 40 @ 40&5 g Visca.—Solid Box. currency # h 13/c Wrenches.—Coes Genuine dis 40&5 @ 40&10 g Coes Initiation Wrought Bar dis 60&50 % 10 g " Malleable Bar dis 60&10 g " Malleable Bar dis 60&10 g Tafts Pattern (Wrought Bar) dis 70 @ 70&10 6 Thisdelphia Tool Co.'s Pat. Duplex dis 20 @ 70&10 6
Malleable Bar
Tafts Pattern (Wrought Bar)
1 SEVA DE DE CONTRACTOR DE L'OR CONTRACTOR C
Coppered to 12 Advanced April 24th) dis 50 g 10 is 50 g 10 i
Galvanized Wire No. 1 to 13
BUFFALO.
Reported by Messrs. Sidney Shepard & Co. Sept. 11, 1876.
Augers—Snell Mfg. Co. dis 25 g Axes—Francis. 10 25 g Bits, Auger—Snell Mfg. Co. dis 25 g Phyenic dis 25 g

Phonix Gis 25 k	74
Bells, Cow-Yaw s Genuine.	w
Braces—Bit, Spofford's Patent	
Brass Shootsdis 50&10 %	
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Bolra-Stove, Brooks Pat.dis 35 % 4 mos.; 35&5 % 30 dys	
Brick-Bath (box of 2 doz) Best spetialdis 40 %	
Can Openers—Sprague's	
Cases—Parior Coal Hoddis 55&10 %	
Chisels—Firmer Socket	
Framing Socketdis 70 \$	
Corner Socket Chiselsdis 70 %	
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Cooks Clobe and Push	
Cutters-Meat "Halos"	D
Egg Beaters-" Dover"	v
Elbows-Corrugated per doz \$4'00	ľ
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Columbus dls 20 %	v
Files—Maischoss Bros	
Fluters-Geneva Hand & doz. \$15:00	
Harry Mark Mark W. Champion'	١
Hinges, Gate Shopard's	A
Hinges - Window Bund-	V
Shepard's and Standard	١,
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Funnel, Black and Galvanized	8
Fancy and Helmet	lĩ
Sad Irons	1
Kettles-Brass	1.
Copper, "Hand Made",	F
Frives Orawing-Oval No. 1	200
Fazor Blade	10
Lanterns, Tubular-with guard	1
Without guard	1
Machines-Apple Paring 7:40 % don	E
Machines—Boring, Snell's	1
Mins, Coffee-Box and Side, common.	1
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DETROIT.

(Reported by Meson	rs. Jewett & Root.)
Aug.	9, 1876.
Tin Plate Best Charcoal	Pla Tin
IC. 10x14\$ 8 75	Large Pigs
IX.10x14 11 25	Small Pigs
XX.10x14 13 75	Bars
IC. 12x12 9 25	Bright Wire.
IX. 12x13 11 75	63 lbs. in bdldis
IC. 14x20 9 75	Copper
IX. 14x20 12 25	Sheathing
XX. 14x20 14 75	Copper Bottoms8
XXX. 14x20 17 25	Planished Copper.
XXXX. 14x20 19 75	Sheathing, 14x48
DC. 100 Plate 8 25	Boller Size, No. 7
DX. " 10 75	" No.8
DXX 18 25	" " No. 9
DXXX " 15 75	No. 18 Am. Com
DXXXX 100 Plate 18 25	No. 18 Am. Com
[X, 14x14 17 75	No. 24 Am. Com
IC, 10x14 W 8 25	No. 26 Am. Com
1X. 10x11 W 10 75	No. 27, Am. Com
Roofing TinBest Char.	W. D.WOOD'S & CO. S SH
IC, Terne, 14x20 8 25 IX. 4x20 10 75	Nos. 15 to 20 Smooth 8
IC. Terne, 20x28 17 80	21 to 24
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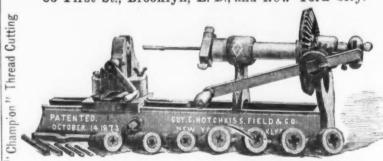


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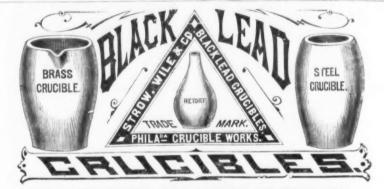
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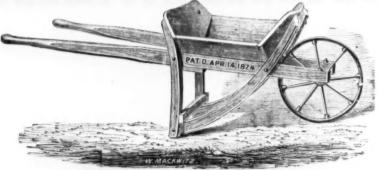
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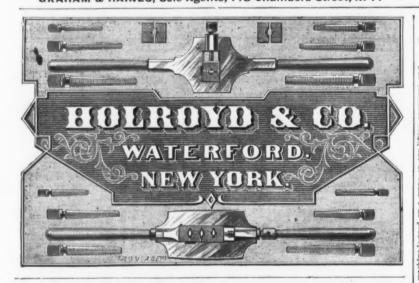
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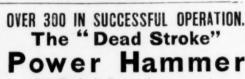
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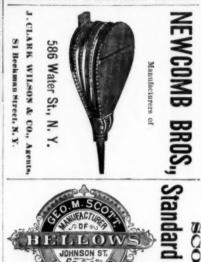
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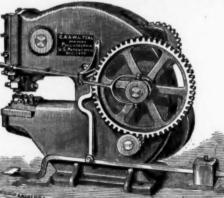
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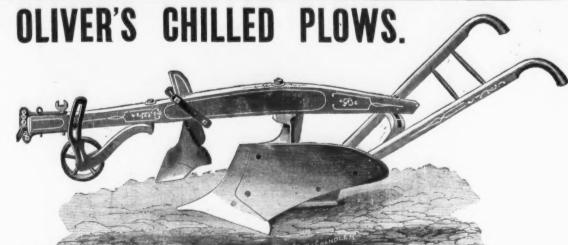
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	Aug. 21, 1876,	Picks
	Tin PlateI. C. 10x14 Charcoal @ #8'75	Pins.
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	I. C. 20x28 Charcoal Roofing	Mille
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	I. C. 14x20 Coke	Cust
	I. C. 10x20 Coke @ 18:00	Pulle
	Sheet Zine.—Unax @ 9140	Plate
	Sneet @ 10 c	Pecke
	Copper.—Braziers	Ame
	Sheathing	Rail
	Bottoms @ 34 c	
	Bar @ 82 c	River
	BlockTinPig @ 24 c	
	Bars @ 26 e	-
	LendPig @ 7kc	
	Bar	Sand
	BolderS. & Co	M. B. a
	Market Wire,—Bundles	Sa we
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	Galvanized	Sevin
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	Tabe50c	Spadi
	Babitt Metal-No. 1 2 3	Stone
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	Nickel	Vises
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	Mad Irons	" Ho
	Enameted Ware discount from new list 50 %	Ware

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Denovted he French Str.	urges & Co., 72, 74 & 76 Lake St.)
(TROPIOLOGIE OR T. LISTEN 1200	urges & Co., 72, 74 & 76 Lake SL) 100 1, 1876. 14320, IXX, Ch' Best. 14 50 14320, IXXX, " 17 00 8 50 DC, 100 Plate, " 18 50 1 00 DX, " 18 50 1 00 DX, " 18 50 1 50 DXXX # 18 10 2 00 DXXX # 18
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ŀ	H. L. B. & Co. 's. L. & Co "	9 7
1		0 2
l	Figure F	50
۱	Jamies & Co	
ı	Axles"Jones, Henry & Co.'s" Patent Lubri-	13.00
۱	Axles Jones, Henry & Co.'s Patent Lubri-	
ł	cating, Half Patent. Swelled Taper, Plain Ta-	
ł	per and Concord Axlesdis 25	Se
ı	Common Axles (Pat. Lubricating), 1% inch and	
ı	upward @ D.	
î	do. less than 1 1/4 incn	6 % C.
١	Bellows Best 6t, Louis make 50c w in	
1	Bella, - Troy, Church, School and Farm Bells W	3. 4CH
ł	"Improved Amalgam Bronzed." 15 in., \$2.00;	
1	17 in., \$2.50; 19 in., \$4; 21 in., \$6; 24 in., \$14; 27 in. \$	19:50
1	Beiting "Boston Belting Co.'s Rubber dis 4	1625
١	Bradford & Sharp's" Oak-Tanneg Leather dl	s 35
J	Bonts-Metallic, Sectional, Bond's Patnew in	at ne
ı	Bolts, -Arms, Bell & Co.'s Carriage & Tire dia 70	de 10
J	Arms, Beil & Co.'s Machine	S 10
1	Butts Western Butt Co.'s new list-	
1	Narrow Fast Jointdis 2:	& 10 s
1	Broad Fast Jointdis 3	& 10
J	" Loose "dis 45	\$10
1	Reversible dis 40	W- 1/1
J	Japanned and Silver Tippeddis 45 Loose Joint ** Acorn ** dis 45 Churns.—Julian, No. 2, \$7:00; No. 3, \$7:50; No. 4	dr 10
ı	Loose Joint " Acorn " " " " dis 45	J. 10
1	Churns Julian. No. 2, \$7:00 - No. 3, \$7:50 - No.	the so
1	#8·50	90
1	Cider Mills.	0 20
ı	American Senior, \$29.00 : Am Junior, \$18.50	23.0
1	Corn Drill,-Campbell's Patent each	e ale
1	Corn Knives, -Dunn E'ge T'or Co, 's Clip # go	2 5 0
ı	Seymour Mfg. Co.'s solid Steel Back "	0
1	Corn Shellers, -Sandwich Mfg. Co.'s-	0
j	Power Shellersdi	la 101
1	Hand ShellersSpecial	Post a
1	Cotton Gins.	1 me
	Carver, with 10 in. Saws, \$3°15 a Saw	73.0
	12 in. Saws, \$4'(K) a Saw	. ne
	One of the Saws, Park a Saw	ne

Hand Shellers, Special rates
Cotton Gins.—
Carver, with 101n. Saws, \$3'15 a Sawnet
12 in. Saws, \$4'(t) a Sawnet
Crow BarsSteel Pointed b 6%0
Drag Saw Machines
Culver's Iron Drag Saw dia 10 s
Robinson's Patent Sweepstakes Drag Sawdis 10 4
Fanning Mills Nash & Cutt's dis 20 4
Feed CuttersImproved Burdick National dis 20 5
Sanford No. 1, \$10 00; No. 2, \$8 10 ne
Files,-Black Diamond, Mill \$5 00 £ currency.
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Taper 5 00 £ curren cv.
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Auburn Mfg. Co.'s Hav and Manure Forks dis % 8
' ' Handled Hoes dis 30 9
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Allen's Double Wheel Hoe dis 15 9
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Grinding Mills.—Challenge Feed Mills ats 15
Sedgebeer's Nonpareli Milis, dis 15 9
Brauford's French Burr Mills
Hammers, -Masons' Hammers

EFFERENCE SISSONS HEIMINGS E COC
Smiths' Hand 2(c
Handles, -No. 1 Fork, Hoe and Rake dia 20 5
No. 2 Fork, Hoe and Rakedis 314
Harrow Teethi Inch iron & b 4560
% and % inch iron 4%
Barbed or Headed
Hay and Cotton Presses,-
Dederick's Ratiroadnei list
Perpetualnet lis
Hay Knives.
Dunn Edge Tool Co. s @ dox \$12 00 net
Lightning (Weymouth's Patent) & doz 870 50
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Sandwick Leverdis 10 %
Horse shoes.
Rhode Island (Perkin's Pattern) W keg. 85 40
" Mule " 6 59
" Trotting Shoes " 8 00
Tredegar Horseper keg 4 73
" Mule per keg 5 7
attieper Keg 5 i
Hose.
Boston Belting Co.'s Rubber Medium Sizes, dis30&10 4

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Pumps.					
St. Louis.	Farm, P	atent Me	tal Line	lnew	list dia 25 5
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ı	Rakes Paddock's Premium Suiky each \$27 50
١	St. Louis Revolving 14 tooth, 4 SU ne
ı	5 (N) ne:
ı	" Hand Hoy Rake per doz \$2.50
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١	Premium
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I	dis 30 , and 75c per doz extra
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ı	do. O. Ames & Sen, and 17% and .5c "
1	Siedges Smith's Stone or Coal Siedges
l	Steel Face Polished B
1	Solid Cast Steel " 30
	Spaths and Cradles Seymour Mig. Co.'s dis a
	Sorghum Machinery Beil Cane Mints als 10
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TV 19w19 # 19whi TC 10w14 Coles
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Usual difference for odd sizes.
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Sheet Capper.
Brazier's Sixet 14 to 100 the Specie
" 10 and 12 lbs., "
" 10 and 12 lbs., " 4 " 6, 7. 8 and 9 ib. Sheets. 56
Tinned, 14x48, 14 and 16 oz
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Sheet Iron - Com'n. Sm'tn. Char'l. m'n
No 16 to 31
No 22 to 24 4 c 48 c 64 c 75 c
No. 25 4: 26 Ave 5 c 6kc 8 c
No. 27
NO. 18 to 30. 4 c 4 5 c 5 5 c 7 5 c 5 0 5 c 7 5 c 5 0 5 c 5 c 5 c 5 c 5 c 5 c 5 c 5 c
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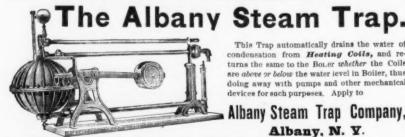
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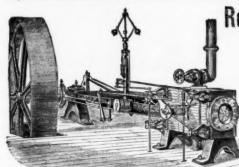
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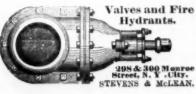


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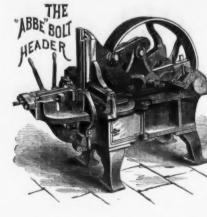
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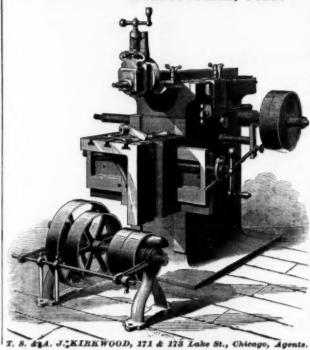
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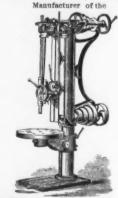
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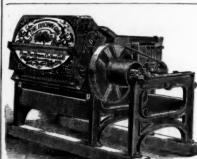
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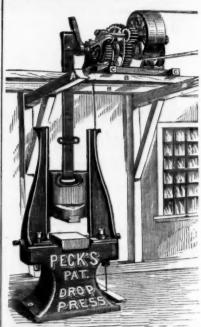
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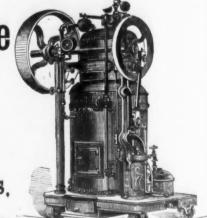
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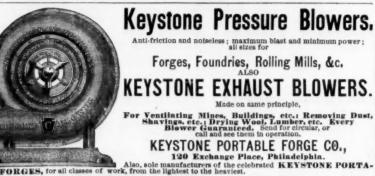
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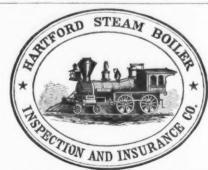
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which are at once simple, elegant, and effective. Your committee would inhesitatingly recommend for this exhibition the "Medal of Progress," but ind such award debarred by the rule of the Institute, orbidding such award unless a Silver Medal has been previously awarded We, therefore, respectfully recommend the award of a Silver Medal. Silver Medal Awarded.

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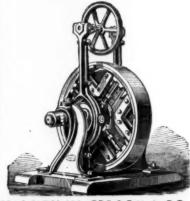
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The handle being half round at the junction of the blade makes it the trongest Shovel ever manufactured, (where all other shovels fail.)

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